

# TC-WR87ES/WR775

## SERVICE MANUAL

*US Model*  
*Canadian Model*

TC-WR775

*US Model*

TC-WR87ES



Photo: TC-WR87ES

### SPECIFICATIONS

Recording system 4-track 2-channel stereo  
Fast winding time Approx. 90 sec. (with Sony C-60 cassette)  
Bias AC bias  
Signal-to-noise ratio (at peak level)

Dolby NR switch	OFF	B-Type ON	C-Type ON
Cassette			
Type IV (Sony METAL-SLT)	58 dB (WR775) 59 dB (WR87ES)	66 dB (WR775) 67 dB (WR87ES)	73 dB (WR775) 74 dB (WR87ES)
Type II (Sony UX-S)	57 dB (WR775) 58 dB (WR87ES)	65 dB (WR775) 66 dB (WR87ES)	72 dB (WR775) 73 dB (WR87ES)
Type I (Sony HF-S)	55 dB (WR775) 56 dB (WR87ES)	63 dB (WR775) 64 dB (WR87ES)	70 dB (WR775) 71 dB (WR87ES)

Total harmonic distortion 1.0% (with Sony METAL-SLT cassettes)

Frequency response (DOLBY NR OFF)

Type IV cassette (Sony METAL-SLT)	30 - 18,000 Hz ( $\pm 3$ dB, IEC) 30 - 15,000 Hz ( $\pm 3$ dB 0VU (-4 dB) recording)
Type II cassette (Sony UX-S)	30 - 17,000 Hz ( $\pm 3$ dB, IEC)
Type I cassette (Sony HF-S)	30 - 15,000 Hz ( $\pm 3$ dB, IEC)

Wow and flutter  $\pm 0.13\%$  W.Peak (IEC)  
0.07% WRMS (NAB)  
 $\pm 0.18\%$  W.Peak (DIN)

Inputs

Line inputs (phono jacks)	Sensitivity	77.5 mV
	Input impedance	47 k ohms

Model Name Using Similar Mechanism	TC-WR775	TC-WR720/WR720A	
	TC-WR87ES	TC-WR80ES/WR820A	
Tape Transport Mechanism Type	TC-WR775	DECK A, B	TCM-190RB12
	TC-WR87ES	DECK A, B	TCM-190RB31

Outputs

Line outputs (phono jacks)	Rated output level	0.32 V at a load impedance of 47 k ohms
	Load impedance	Over 10 k ohms
Headphones (stereo phone jack)	Output level	0.2 mW at a load impedance of 32 ohms (WR775) 0-1.25 mW at a load impedance of 32 ohms (WR87ES)

General

Power requirements 120 V AC, 60 Hz  
Power consumption 30 W  
Dimensions Approx. 430  $\times$  135  $\times$  300 mm (w/h/d)  
(17  $\times$  5  $\frac{1}{8}$   $\times$  11  $\frac{7}{8}$  inches)  
including projecting parts and controls  
Weight Approx. 4.9 kg (10 lbs 13 oz) (WR775)  
Approx. 5.3 kg (11 lbs 11 oz) (WR87ES)


Supplied accessory

Audio connecting cords (2)

Design and specifications subject to change without notice.

WR775 : TC-WR775  
WR87ES : TC-WR87ES

\* Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.

"DOLBY", the double-D symbol  and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

STEREO CASSETTE DECK  
**SONY**<sup>®</sup>





## TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
SECTION 1.	GENERAL . . . . .	3
SECTION 2.	DISASSEMBLY . . . . .	4
SECTION 3.	MECHANICAL ADJUSTMENTS . . . . .	7
SECTION 4.	ELECTRICAL ADJUSTMENTS . . . . .	7
SECTION 5.	DIAGRAMS	
5-1.	Circuit Boards Location . . . . .	11
5-2.	Semiconductor Lead Layouts . . . . .	12
5-3.	Printed Wiring Boards . . . . .	14
5-4.	Schematic Diagram	
—Audio/Power Section—	. . . . .	19
5-5.	Schematic Diagram	
—System Control/FL/Panel Section—	. . . . .	23
5-6.	Schematic Diagram	
—Panel Section—	. . . . .	27
SECTION 6.	EXPLODED VIEWS	
6-1.	Chassis Section . . . . .	30
6-2.	Front Panel Section(TC-WR775) . . . . .	31
6-3.	Front Panel Section(TC-WR87ES) . . . . .	32
6-4.	Mechanism Section-1 . . . . .	33
6-4.	Mechanism Section-2 . . . . .	34
SECTION 7.	ELECTRICAL PARTS LIST . . . . .	35


## FEATURES

- The Dolby HX PRO\* system which improves the linearity of a tape's high-range response during recording.
- A relay function for long recording and playback.
- Automatic tape type detection during playback and recording.
- Auto-synchro dubbing at normal or high (double) speed.
- AMS and memory play functions which provide easy access to desired selections.
- An easy-to-read digital counter which shows the elapsed recording or playback time for decks A and B.

## SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

## ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE  SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

## SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

## LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

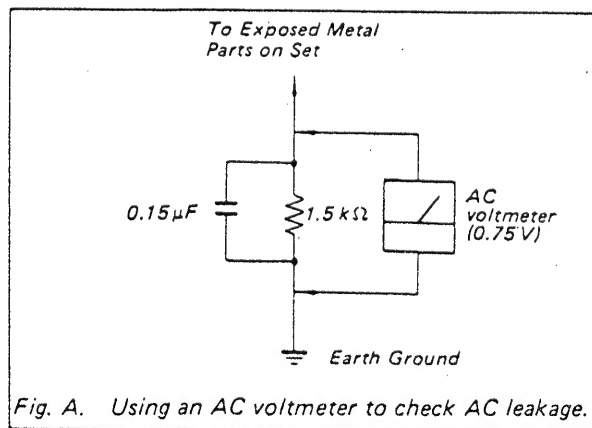
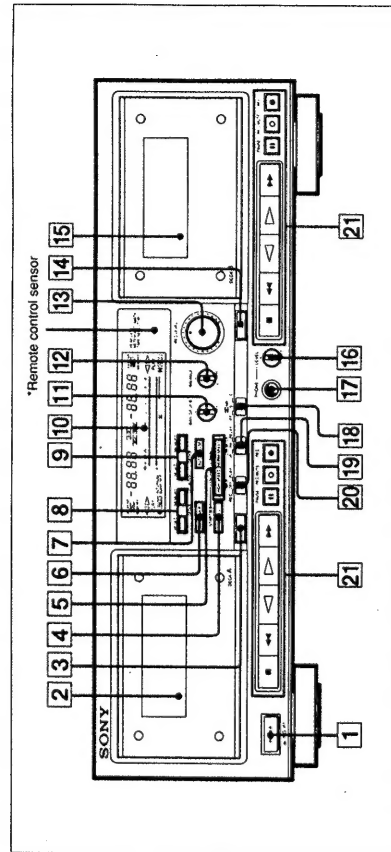



Fig. A. Using an AC voltmeter to check AC leakage.

**TC-WR87ES**



**For details, refer to the page number indicated in ●**

- 1 POWER switch
- 2 Deck A
- 3 (eject) button (deck A)
- 4 A+B REC (simultaneous recording) button
- 5 SYNCHRO DUBBING buttons
  - HIGH SPEED button
  - NORM (normal) SPEED button
- 6 BLANK SKIP button
- 7 AUTO PAUSE button
- 8 COUNTER buttons (deck A)
- 9 NR (Dolby noise reduction) switch
- 10 DIR (direction) MODE switch
- 11 TIMER switch
- 12 Tape operation buttons
  - (stop) button
  - ◀◀ (leftward fast winding) (AMS\*\*) button
  - ◀ (reverse play) button
  - ▶ (forward play) button
  - ▶▶ (rightward fast winding) (AMS\*\*) button
  - II PAUSE button
  - ◌ REC MUTE (record muting) button
  - REC (recording) button

- Any optional Sony remote commander with the  mark and cassette deck control capability.

\*AMS is an abbreviation for Automatic Music Sensor.

# TC-WR87ES/WR775

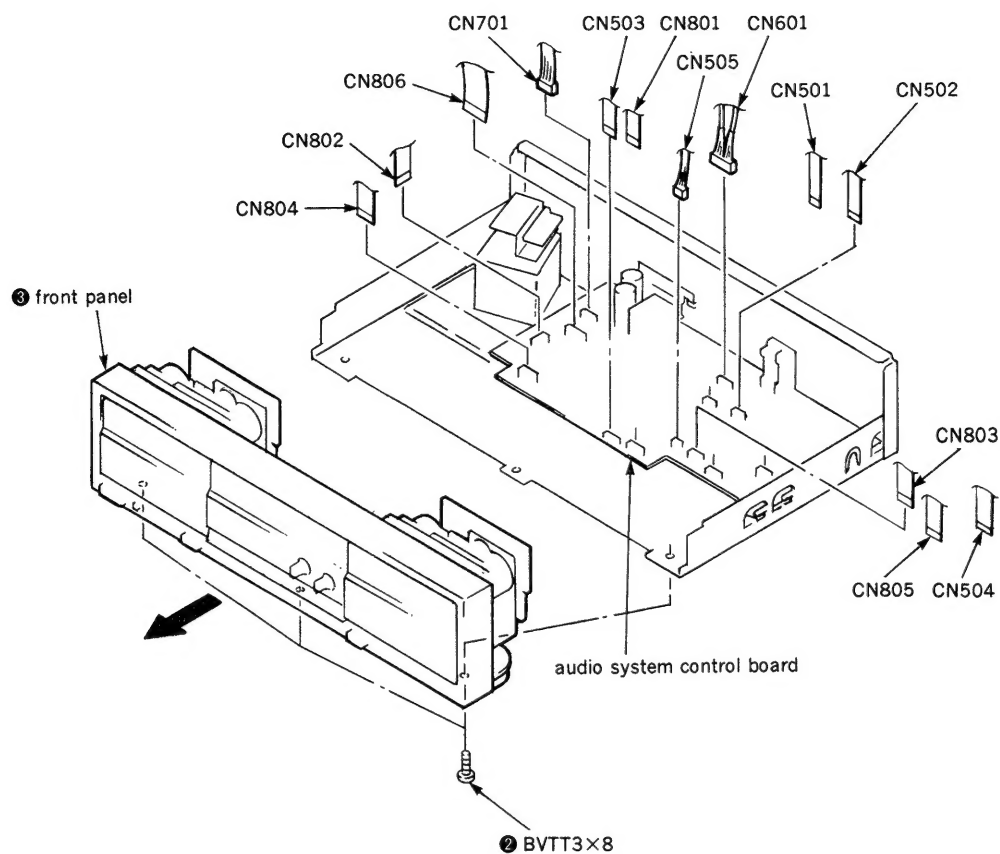
This section is extracted from instruction manual.

## SECTION 2 DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

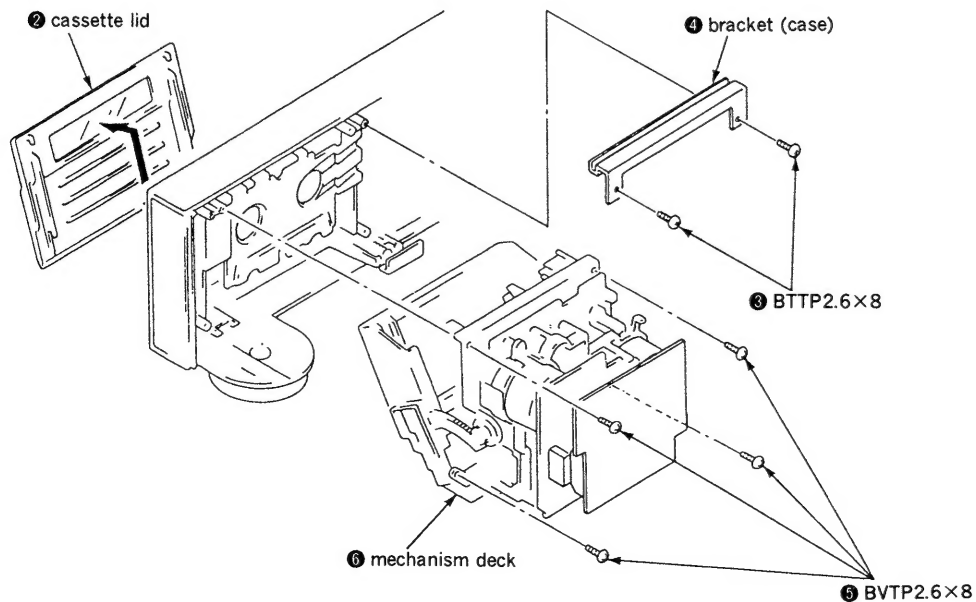
### 2-1. FRONT PANEL (TC-WR775)

- ① Remove the connector from audio system control board.



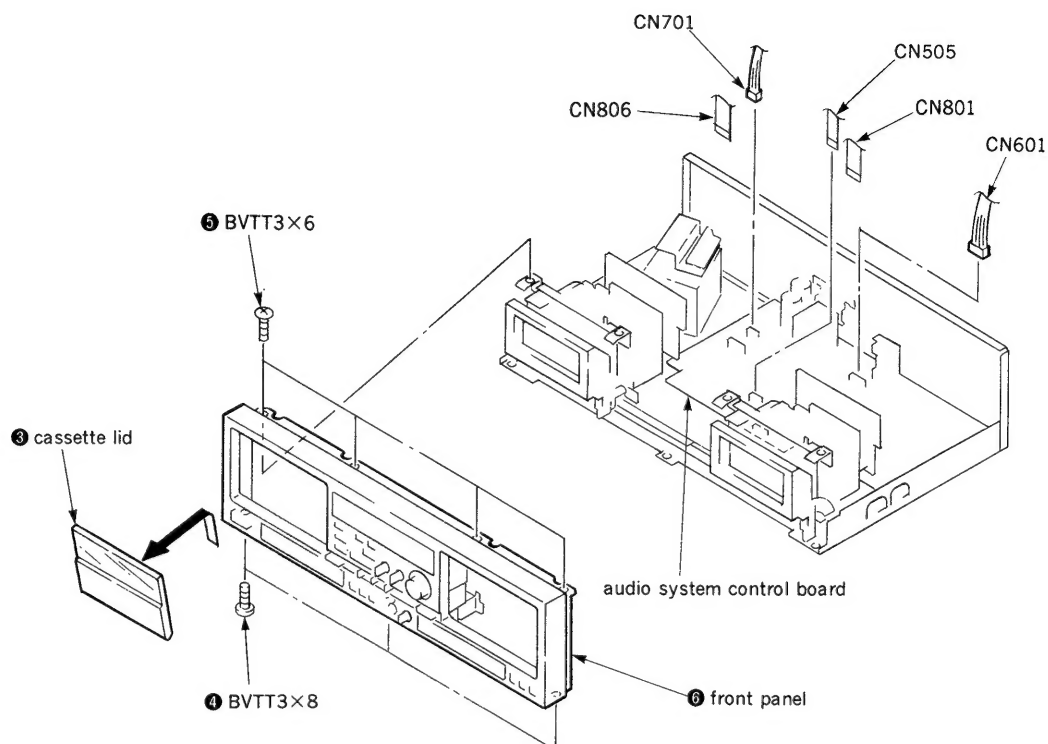
### 2-2. MECHANISM DECK (TC-WR775)

- ① Push the EJECT button.

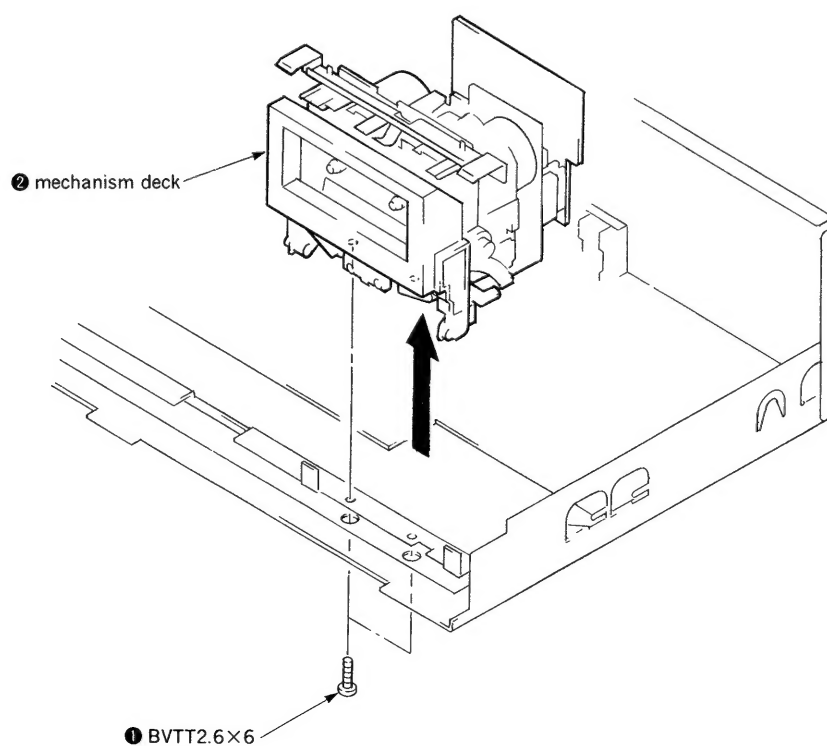


## 2-3. FRONT PANEL (TC-WR87ES)

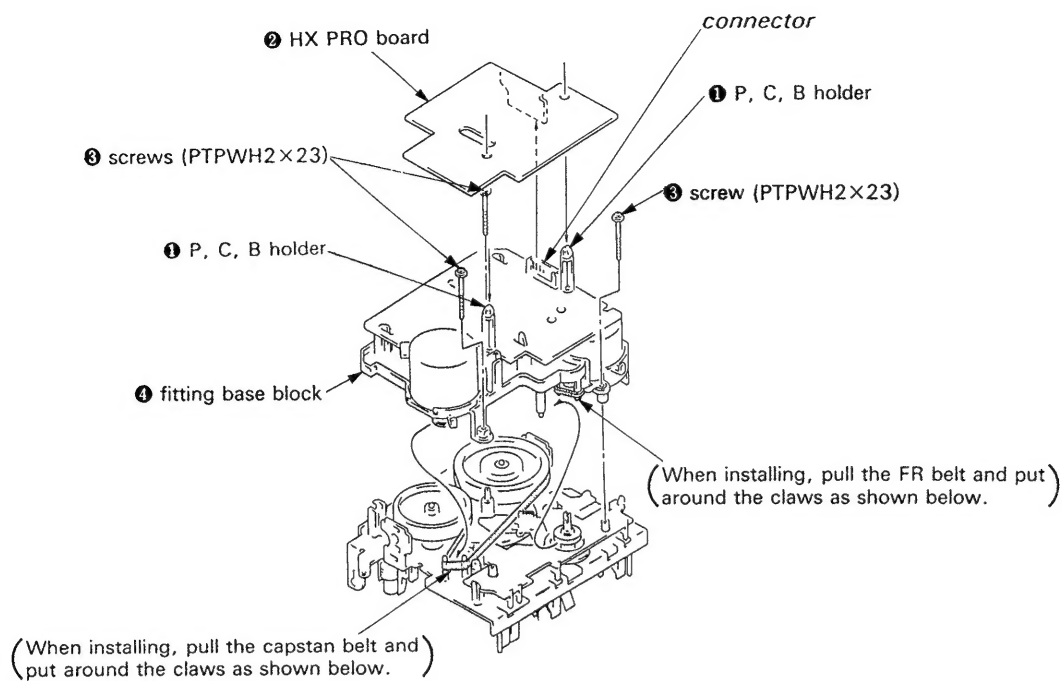
- 1 Remove the connector from audio system control board.
- 2 Push the EJECT button.



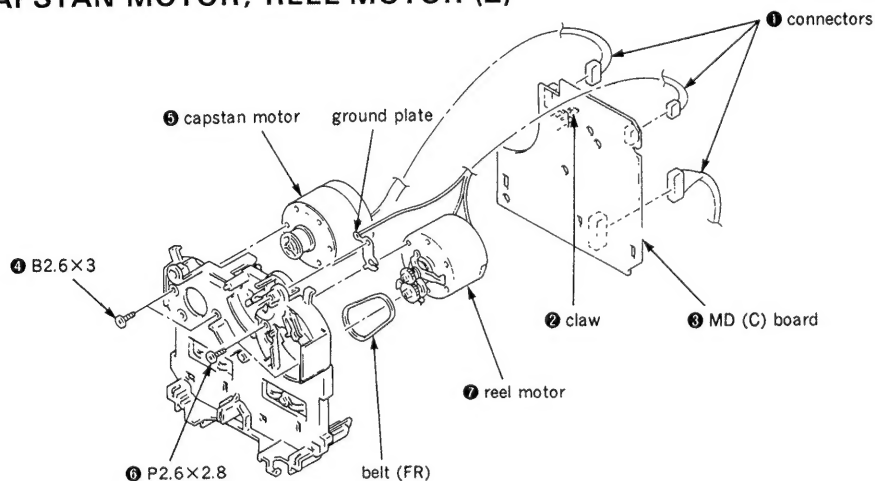
## 2-4. MECHANISM DECK (TC-WR87ES)



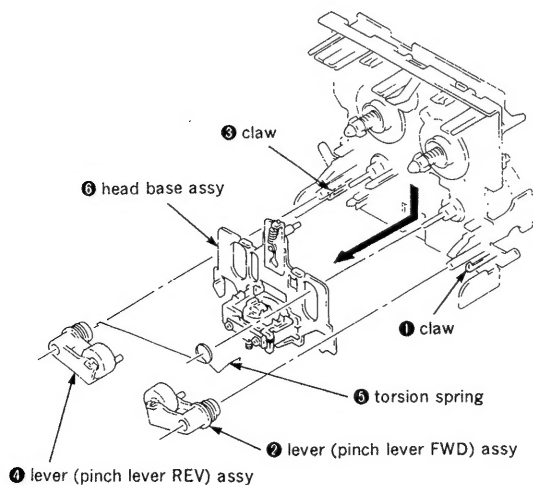
## 2-5. CAPSTAN MOTOR, REEL MOTOR (1)



## 2-6. CAPSTAN MOTOR, REEL MOTOR (2)



## 2-7. HEAD, PINCH ROLLER



## SECTION 3 MECHANICAL ADJUSTMENTS

### PRECAUTION

- Clean the following parts with a denatured alcohol-moistened swab :  
 record/playback/erase head    pinch roller  
 rubber belts                      capstan  
 idlers
- Demagnetize the record/playback head with a head demagnetizer.  
 (Head demagnetizer do not approach for the erase head.)
- Do not use a magnetized screwdriver for the adjustment.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.

### Torque Measurement

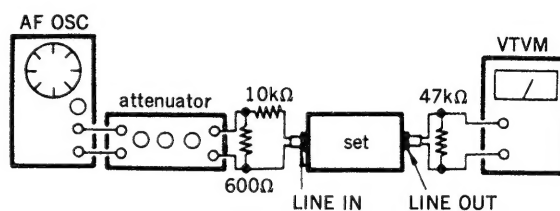
Torque	Torque meter	Meter reading
Forward	CQ-102C	30 to 65g·cm (0.42 to 0.90 oz·inch)
Forward back tension	CQ-102C	1 to 6g·cm (0.014 to 0.08 oz·inch)
Reverse	CQ-102RC	30 to 65g·cm (0.42 to 0.90 oz·inch)
Reverse back tension	CQ-102RC	1 to 6g·cm (0.014 to 0.08 oz·inch)
Forward, Reverse	CQ-201B	70 to 120g·cm (0.98 to 1.67 oz·inch)

## SECTION 4 ELECTRICAL ADJUSTMENTS

### PRECAUTION

- The adjustment should be performed in the publication.  
 (Be sure to make playback adjustment at first.)
- The adjustment and measurement should be performed for both L-CH and R-CH.
  - Switch position  
 DOLBY NR switch : OFF  
 DIR MODE switch : ⇄
  - Standard record position  
 Deliver the standard input signal level to input jack and set the REC LEVEL control to obtain the standard output signal level as follows.

—Record Mode—



### Standard Input Level

Input terminal	LINE IN
source impedance	10kΩ
input signal level	0.25V (−10dB)

### Standard Output Level

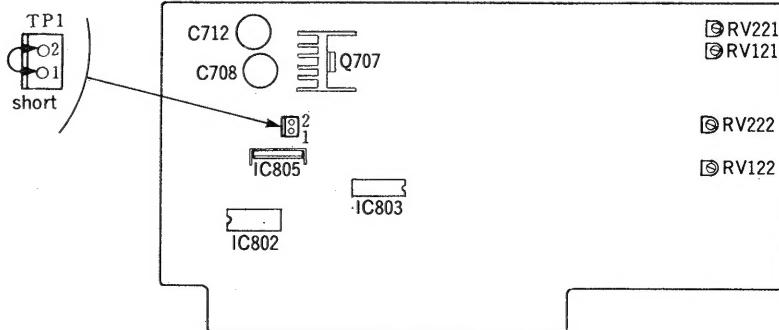
Output terminal	LINE OUT
load impedance	47kΩ
output signal level	0.44V (−5dB)

### Test Tape

Tape	Contents	Use
P-4-A100	10kHz, −10dB	Azimuth Adjustment
P-4-L300	315Hz, 0dB	Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

- When to electrical adjustments, short the connector TP1 (test mode).

audio system control board —component side—

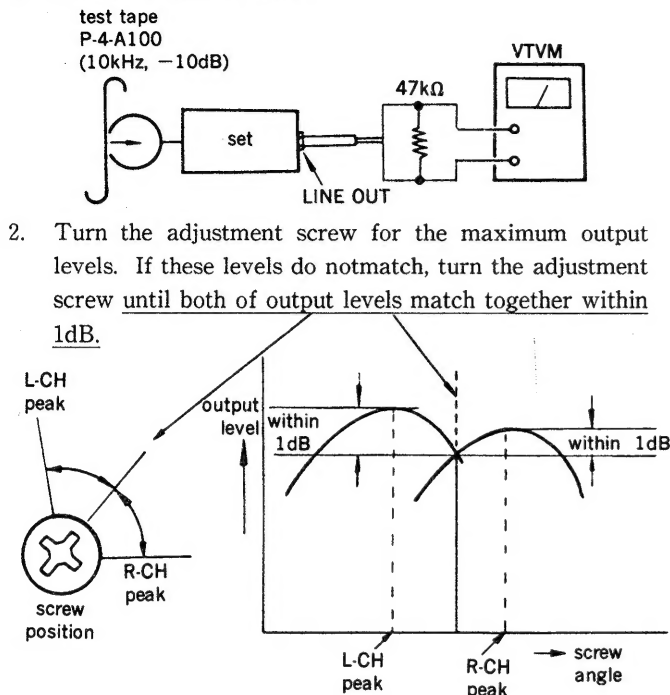


## Record/Playback/Erase Head Azimuth Adjustment

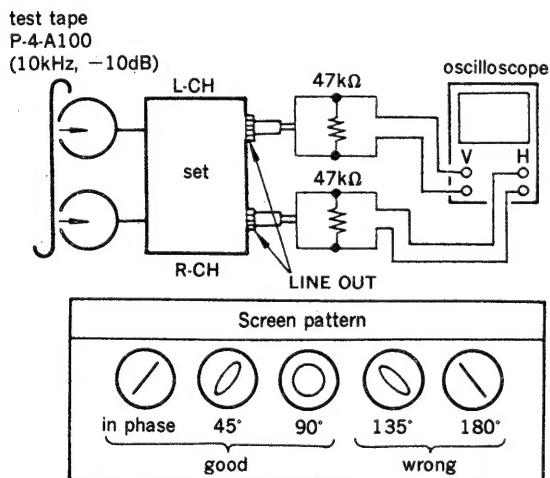
### DECK A DECK B

#### Procedure :

1. Reverse Playback Mode

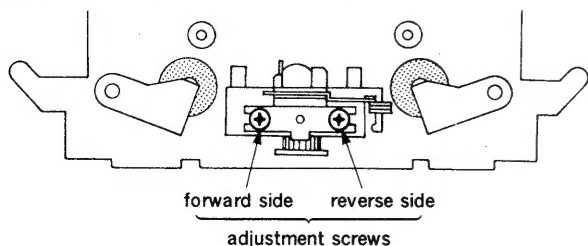


3. Playback Mode



4. Change the forward playback mode and repeat the steps 1 to 3.
5. After the adjustment, lock the adjustment screws with suitable locking compound.

**Adjustment Location :** — record/playback/erase head —

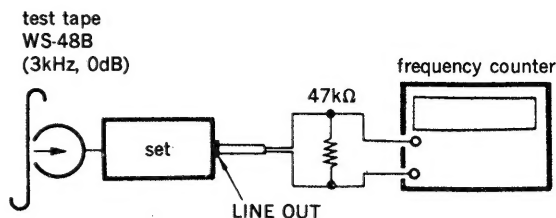


## Tape Speed Adjustment DECK A DECK B

Perform high speed adjustment before normal speed adjustment.

#### Procedure :

—Forward Playback Mode—



(high speed adjustment)

1. Keep on pressing the SYNCHRO DUBBING HIGH SPEED switch.
2. Confirm that the frequency counter reading becomes within adjustment limits of  $6,000 \pm 60\text{Hz}$  on both of deck A and deck B.
3. If the adjustment limits are not satisfied, adjust each RV72 so that the frequency counter reading becomes within adjustment limits of  $6,000 \pm 30\text{Hz}$  on both of deck A and deck B.
4. Change the reverse playback mode and repeat the steps 1 to 3.

(normal speed adjustment)

5. Keep on pressing the SYNCHRO DUBBING NORM SPEED switch.
6. Confirm that the frequency counter reading becomes within adjustment limits of  $3,000 \pm 30\text{Hz}$  on both of deck A and deck B.
7. If the adjustment limits are not satisfied, adjust each RV71 so that the frequency counter reading becomes within adjustment limits of  $3,000 \pm 15\text{Hz}$  on both of deck A and deck B.
8. Change the reverse playback mode and repeat the steps 5 to 7.

Frequency difference between the beginning and the end of the tape should be within 3%.

Frequency difference between deck A and deck B the beginning of the tape should be within 1.5%.

**Adjustment Location :** MD (C) board (deck A, deck B)

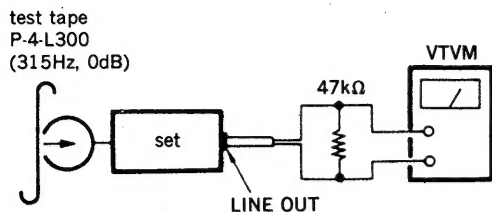
(See page 10)



## Playback Level Adjustment DECK A DECK B

### Procedure :

—Forward Playback Mode—



Adjust each RV11 (L-CH) and RV21 (R-CH) so that the VTVM reading becomes within adjustment limits below on both of deck A and deck B.

### Adjustment Limits :

LINE OUT level:  $-15 \pm 0.5\text{dB}$  (0.130 to 0.146V)

Level difference between channels: within 0.5dB

Confirm the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

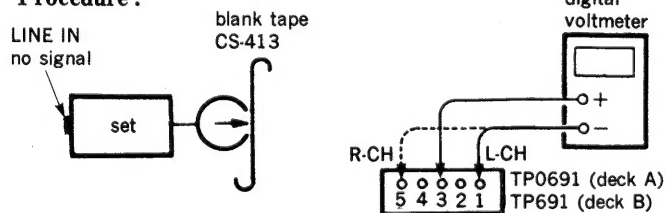
**Adjustment Location :** MD(C) board (deck A, deck B)  
(See page 10)

## Bias Consumption Current Adjustment

### DECK A DECK B

This adjustment should be performed when replacing the head assy or step-up transformer (T0391, 0491 (deck A) and T391, 491 (deck B)), or DOLBY HX-PRO IC (IC0691 (deck A) and IC691 (deck B)).

### Procedure :



(deck A)

1. Connect the digital voltmeter to test point TP0691.
2. Set RV0391 (L-CH) and RV0491 (R-CH) to mechanical center.
3. Set to forward record mode.
4. Adjust T0391 (L-CH) and T0491 (R-CH) so that the digital voltmeter reading becomes minimum.

(deck B)

5. Similarly, connect the digital voltmeter to test point TP691.
6. Set RV391 (L-CH) and RV491 (R-CH) to mechanical center.
7. Set to forward record mode.
8. Adjust T391 (L-CH) and T491 (R-CH) so that the digital voltmeter reading becomes minimum.

**Adjustment Location :** HX-PRO board (A) (deck A),  
HX-PRO board (B) (deck B)  
(See page 10)

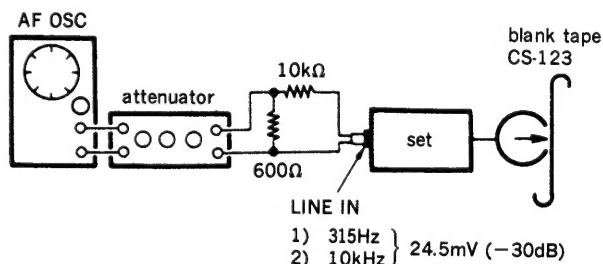
## Record Bias Adjustment DECK A DECK B

### Setting :

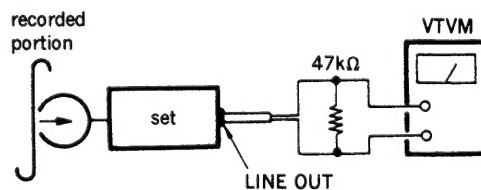
REC LEVEL control: standard record position (Refer to page 7.)

### Procedure :

1. Record Mode



2. Playback Mode



(deck A)

3. Playback the signal recorded in step 1, and confirm that the 10kHz playback output level is VTVM reading becomes within adjustment limits below relative to the 315Hz output.
4. If the adjustment limits are not satisfied, adjust each RV0391 (L-CH) and RV0491 (R-CH) so that the VTVM reading becomes within adjustment limits on next page.

(deck B)

5. Similarly, playback the signal recorded in step 1, and confirm that the 10kHz playback output level is VTVM reading becomes within adjustment limits below relative to the 315Hz output.
6. If the adjustment limits are not satisfied, adjust each RV391 (L-CH) and RV491 (R-CH) so that the VTVM reading becomes within adjustment limits on next page.

### Adjustment Limits :

10kHz playback output

relative to the 315Hz output :  $0 \pm 0.5\text{dB}$

**Adjustment Location :** HX-PRO board(A) (deck A)

HX-PRO board(B) (deck B)

### Record Level Adjustment

**DECK A**

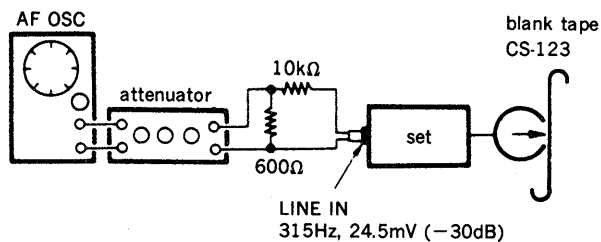
**DECK B**

#### Setting :

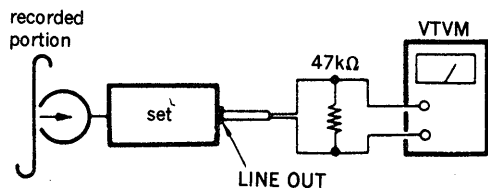
REC LEVEL control : standard record position (Refer to page 7.)

#### Procedure :

##### 1. Record Mode



##### 2. Playback Mode



(deck A)

3. Playback the signal recorded in step 1, and confirm that the 10kHz playback output level is VTVM reading becomes within adjustment limits below relative to the 315Hz output.
4. If the adjustment limits are not satisfied, adjust each RV121 (L-CH) and RV221 (R-CH) so that the VTVM reading becomes within adjustment limits below.

(deck B)

5. Similarly, playback the signal recorded in step 1, and confirm that the 10kHz playback output level is VTVM reading becomes within adjustment limits below relative to the 315Hz output.
6. If the adjustment limits are not satisfied, adjust each RV122 (L-CH) and RV222 (R-CH) so that the VTVM reading becomes within adjustment limits below.

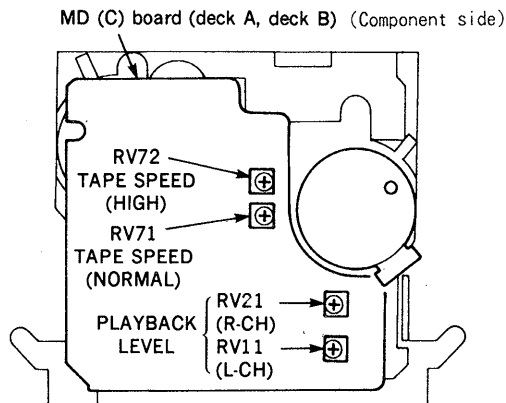
### Adjustment Limits :

315Hz playback output level :  $-25 \pm 0.5\text{dB}$  (42 to 46mV)

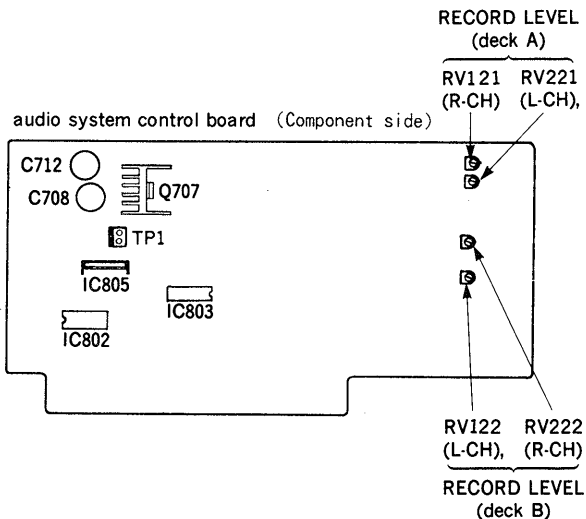
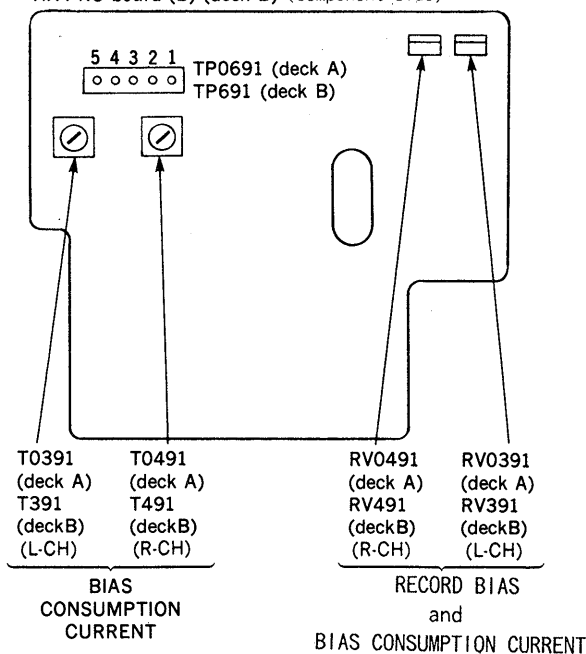
**Adjustment Location :** audio system control board

**Note :** After adjustment, open the connector TP1.

### —Adjustment Parts Location Diagrams—



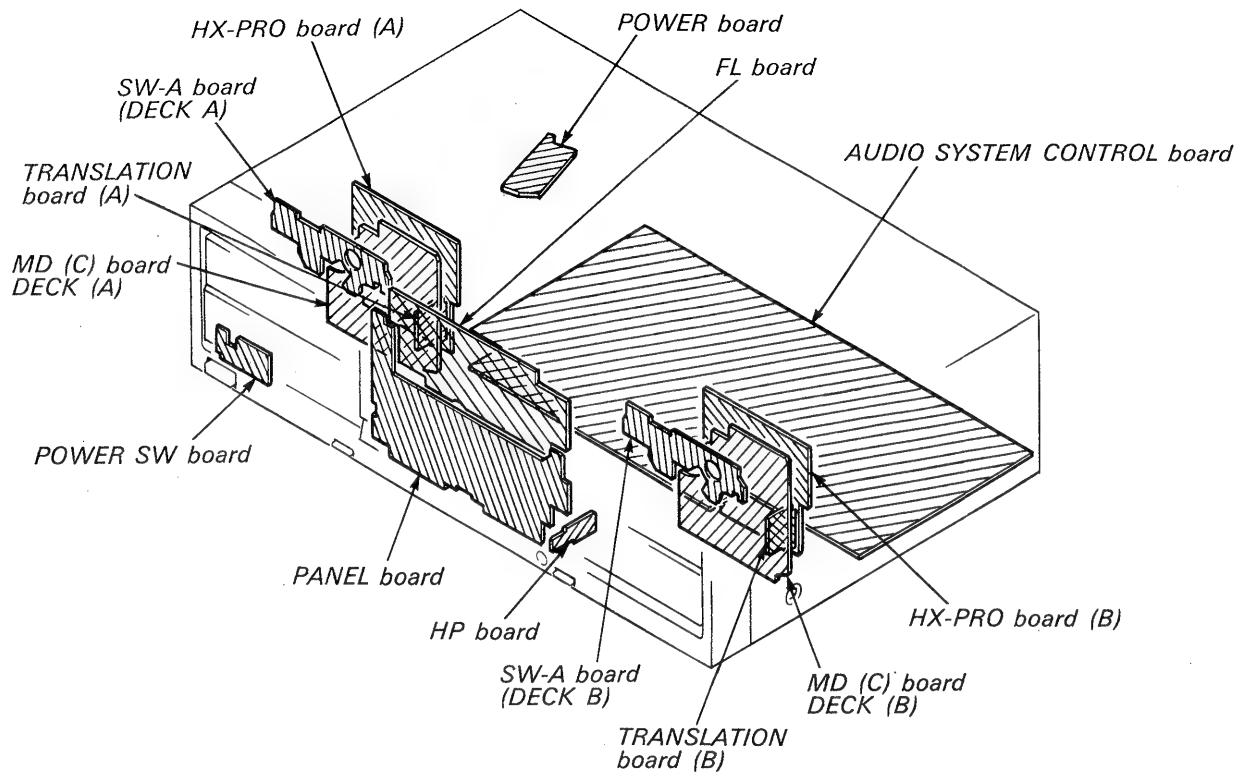
HX-PRO board (A) (deck A),  
HX-PRO board (B) (deck B) (Component side)



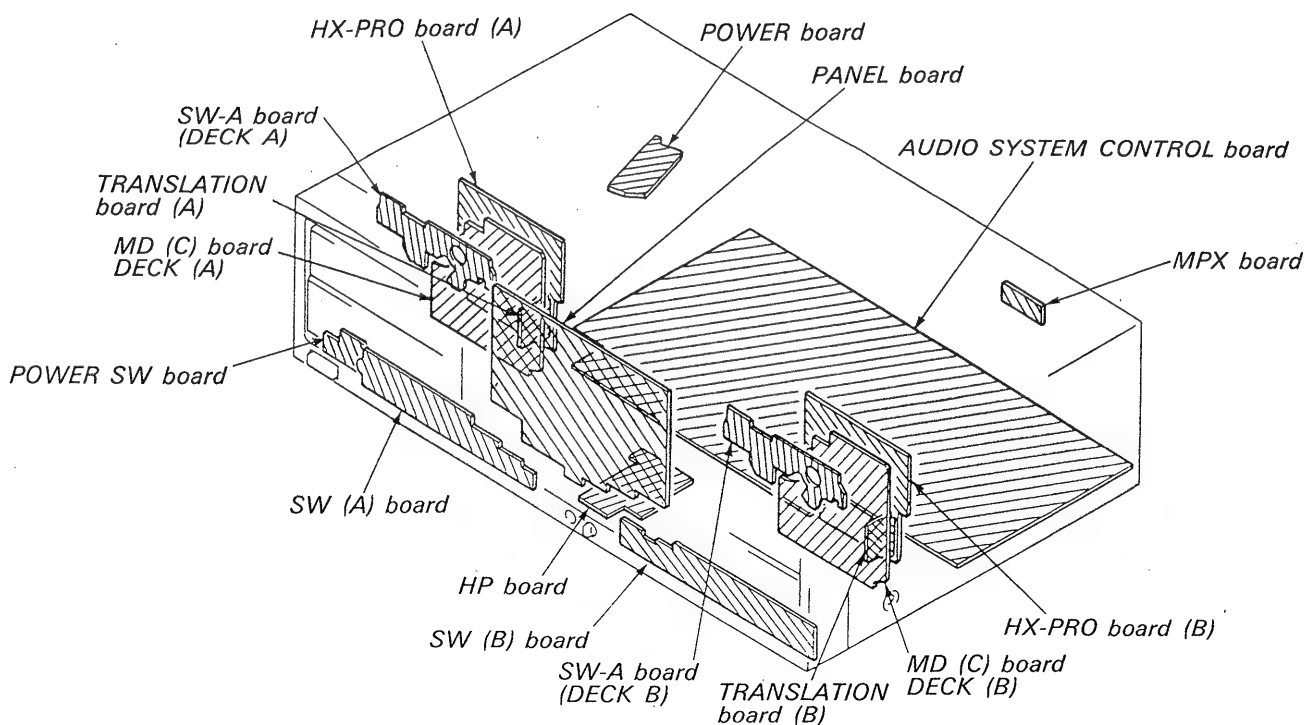
## SECTION 5 DIAGRAMS

### 5-1. CIRCUIT BOARDS LOCATION

(TC-WR775)



(TC-WR87ES)

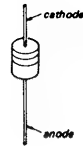


## 5-2. SEMICONDUCTOR LEAD LAYOUTS

DTA114ES  
DTA144ES  
DTC114ES  
DTC143TS  
DTC144ES  
DTC144WS  
2SC2603-EF  
2SD1012-FG



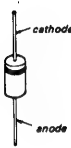
HZS6A1L  
HZS7A1L  
HZS9A2L  
UZL-11L2  
UZL-7H1  
1SS120



2SA1317-S  
2SA1317-STU  
2SB1013-3



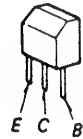
10E2N



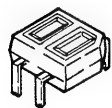
2SB1370-EF



2SD1312-K



NJL5165K-B

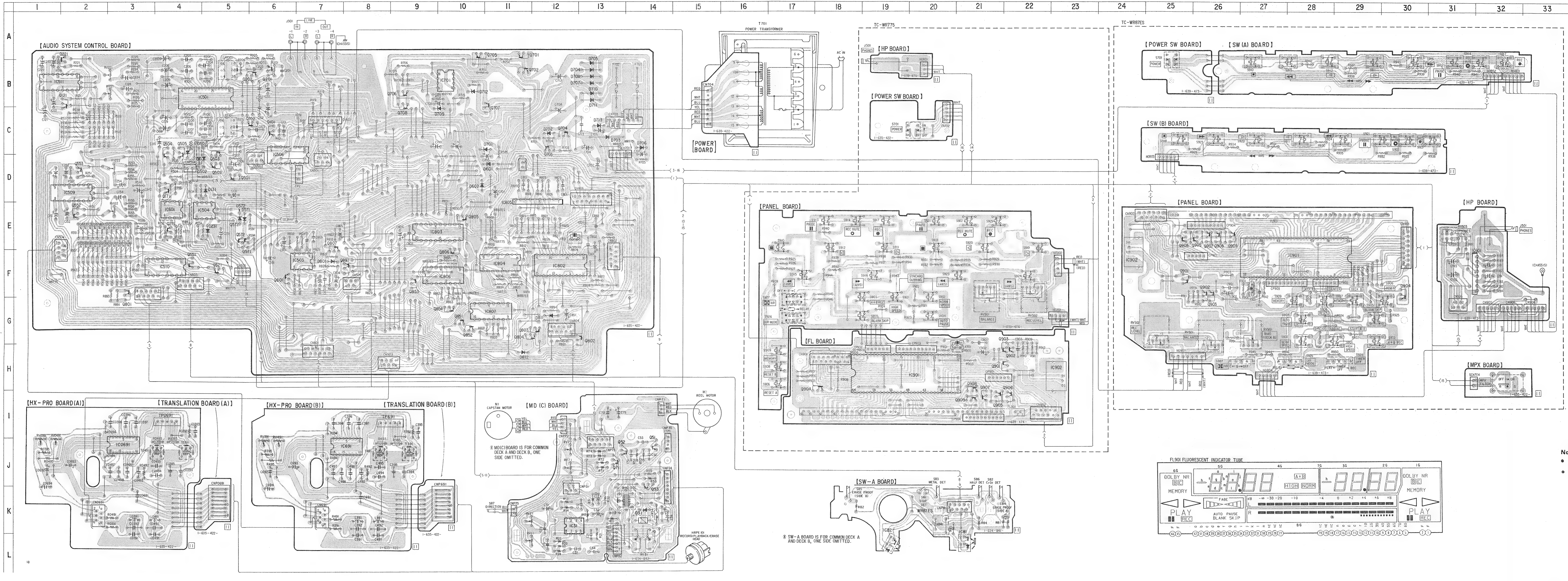




● Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D31	K-14	Q121	B-2
D131	D-5	Q171	D-4
D231	E-5	Q201	B-6
D501(*1)	D-4	Q202	B-6
D502	D-5	Q221	B-2
D503	C-4	Q271	E-4
D571	E-5	Q501	D-5
D572	E-5	Q502	D-5
D601	D-11	Q503	D-5
D602	D-10	Q504	C-4
D701	C-11	Q505	C-4
D702	C-12	Q521	F-5
D703	C-13	Q551	F-4
D704	B-13	Q552	E-2
D705	B-13	Q553	D-2
D706	C-14	Q571	E-5
D707	B-13	Q572	E-5
D708	B-13	Q801	F-6
D709	C-10	Q701	A-11
D710	B-13	Q702	B-11
D711	B-13	Q703	C-12
D712	B-10	Q704	C-12
D713	C-13	Q705	A-10
D801	F-7	Q706	B-9
D811	G-12	Q707	B-11
D812	H-11	Q708	B-9
IC31	K-12	Q801	F-3
IC81	L-21	Q802	G-13
IC82(*2)	L-19	Q803	G-12
IC501	B-5	Q805	E-10
IC503	F-7	Q806	F-10
IC504	E-5	Q807	F-7
IC506	D-6	Q851	G-10
IC509	D-2	Q852	G-10
IC510	F-4	Q853	F-9
IC511	B-1	Q854	G-10
IC601(*1)	E-4	Q891	F-8
IC601(*2)	F-32	Q901(*1)	H-21
IC691	J-8	Q901(*2)	F-25
IC701	B-10	Q902(*1)	H-22
IC802	F-12	Q902(*2)	F-26
IC803	E-9	Q903(*1)	H-22
IC804	F-11	Q903(*2)	F-26
IC805	D-12	Q904(*1)	H-18
IC806	F-10	Q904(*2)	F-30
IC807	G-11	Q905(*1)	I-21
IC901(*1)	H-19	Q905(*2)	E-26
IC901(*2)	F-28	Q906(*1)	I-22
IC902(*1)	H-23	Q906(*2)	E-25
IC902(*2)	F-24	Q907(*1)	I-21
IC0691	J-3	Q907(*2)	E-26
Q51	J-14	Q908(*1)	H-21
Q52	J-13	Q908(*2)	E-26
Q53	K-14	Q909(*1)	I-21
Q71	J-13	Q909(*2)	E-26
Q101	C-6		
Q102	C-6		

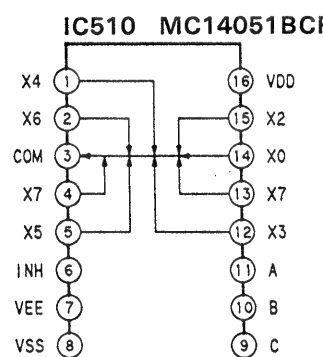
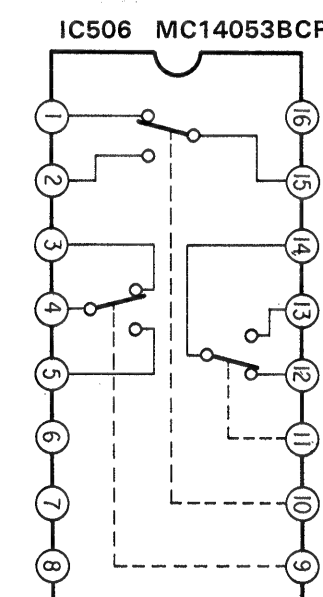
\*1 : Used on TC-WR775 only.  
\*2 : Used on TC-WR87ES only.



Note:  
● ○ : parts extracted from the component side.  
● WR775 : TC-WR775  
WR87ES : TC-WR87ES

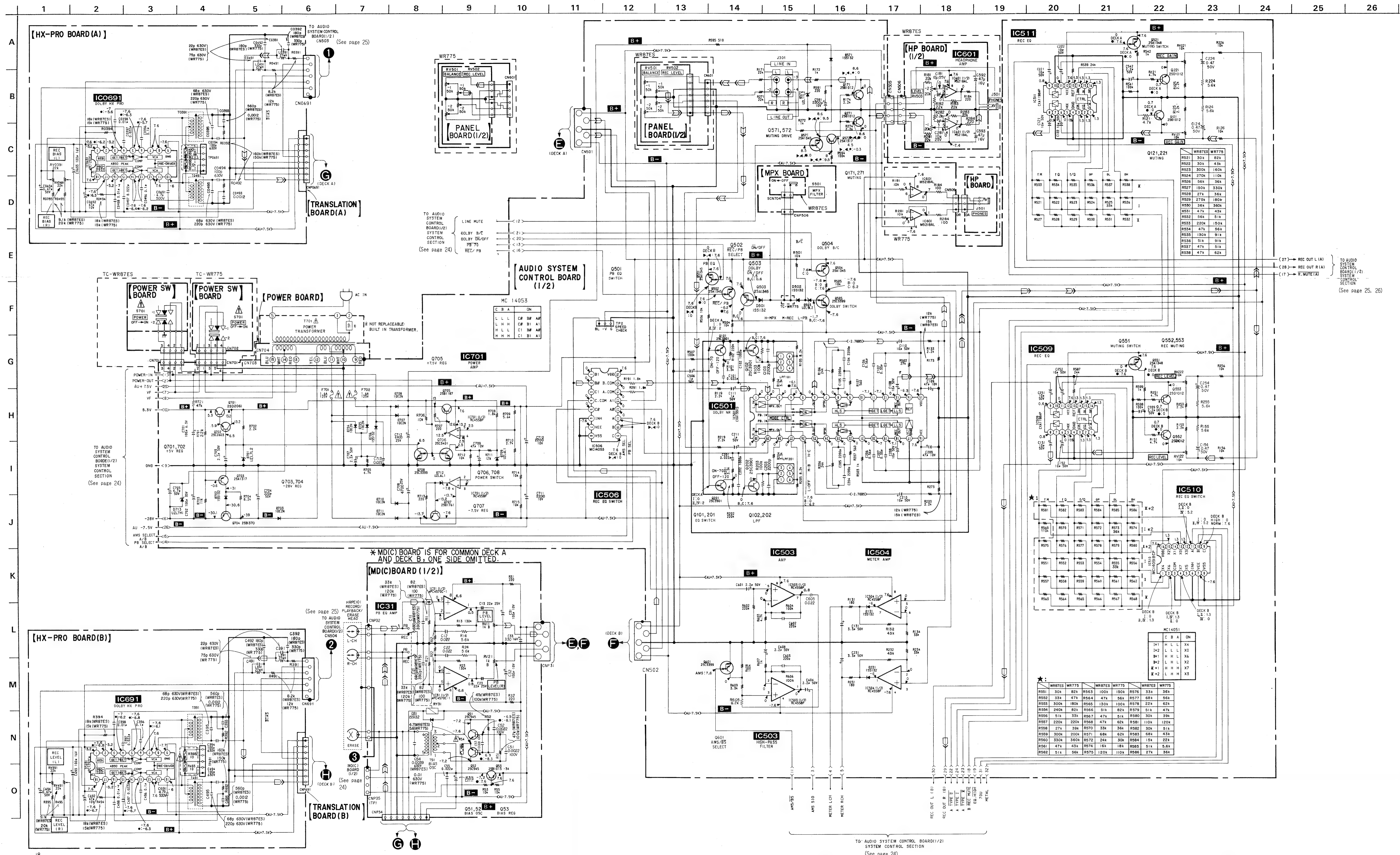


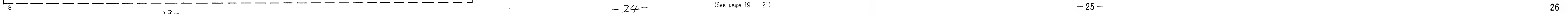
## • IC Block Diagrams



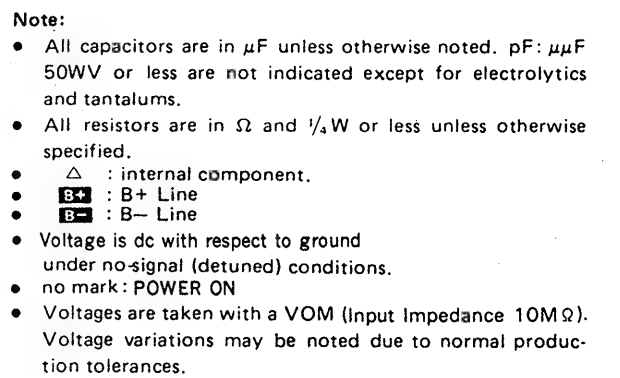
- Note:**
- All capacitors are in  $\mu\text{F}$  unless otherwise noted. pF:  $\mu\text{F}$  50WV or less are not indicated except for electrolytics and tantalums.
  - All resistors are in  $\Omega$  and  $\frac{1}{4}\text{W}$  or less unless otherwise specified.
  - $\Delta$ : internal component.
  - $\square$ : fusible resistor.
- Note:**  
The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.
- Note:**  
Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- $\square$  B+: B+ Line
- $\square$  B-: B- Line
- $\square$ : adjustment for repair.
- Voltage is dc with respect to ground under no-signal (detuned) conditions.
- no mark: POWER ON
- $\blacktriangle$ : FWD  $\blacktriangleleft$ : REV
- $\blacktriangleright$ : FF  $\blacktriangleleft$ : REW
- Voltages are taken with a VOM (Input Impedance 10M  $\Omega$ ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
- $\square$ : PB (DECK A)
- $\square$ : REC (DECK A)
- $\square$ : PB (DECK B)
- $\square$ : REC (DECK B)
- WR775: TC-WR775
- WR875: TC-WR875














## SECTION 6 EXPLODED VIEWS

### NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

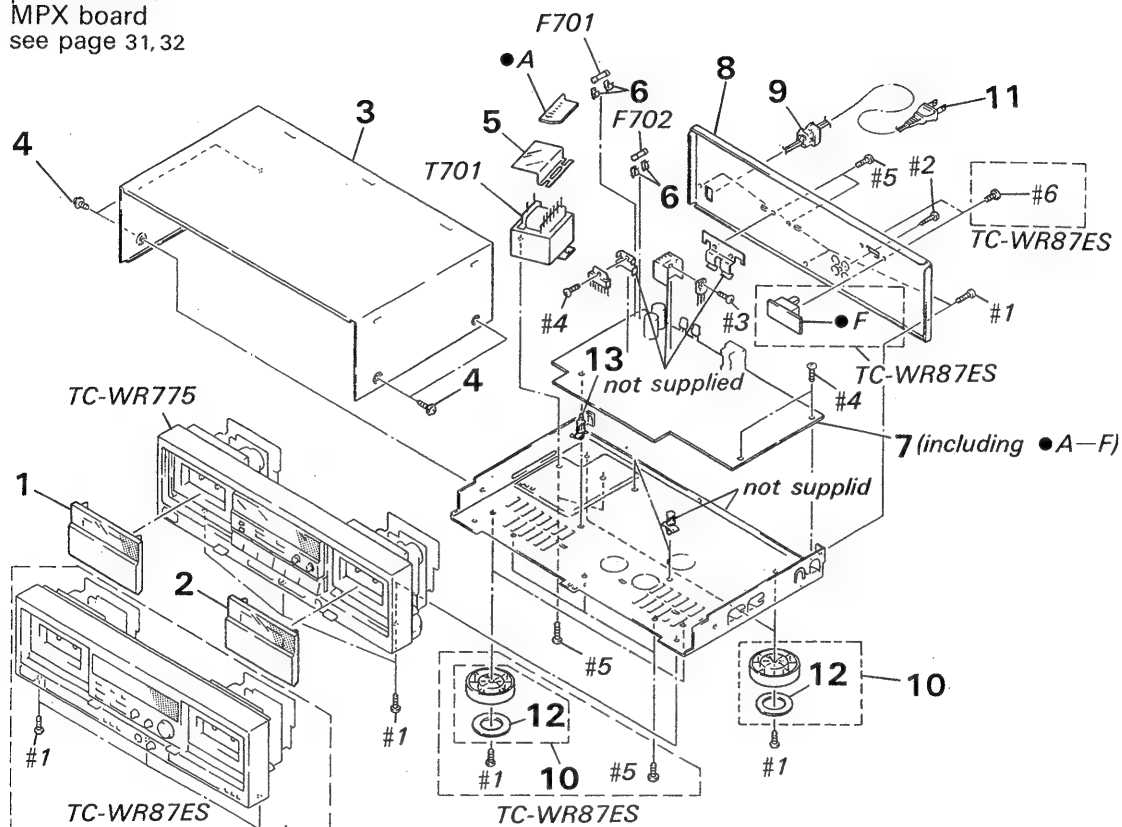
- Color Indication of Appearance Parts  
Example:  
KNOB, BALANCE(WHITE)...(RED)  
Part's Color Cabinet's Color
- Hardware (#mark) list is given in the last of this parts list.
- WR775 : TC-WR775  
WR87ES : TC-WR87ES

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.






Les composants identifiés par une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

### 6-1. CHASSIS SECTION

- A : power board
- F : MPX board
- B-F : see page 31,32

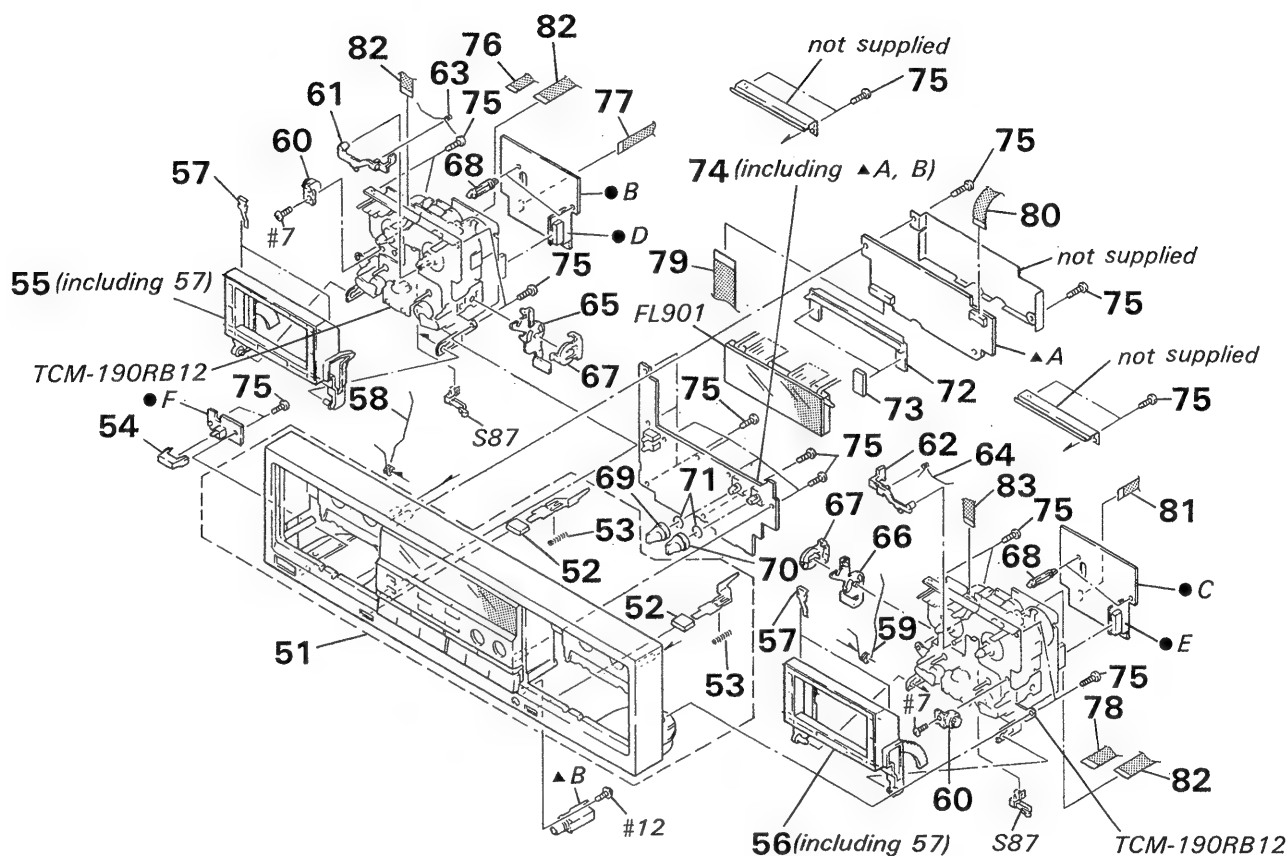


Ref. No.	Part No.	Description	Remark
1	X-3363-194-1	LID (A) ASSY, CASSETTE (WR87ES)	
1	X-3362-988-1	LID (A) ASSY, CASSETTE (WR775)	
2	X-3363-193-1	LID (B) ASSY, CASSETTE (WR87ES)	
2	X-3362-989-1	LID (B) ASSY, CASSETTE (WR775)	
3	* 4-929-294-52	CASE (WR87ES)	
3	* 4-929-294-42	CASE (WR775)	
4	3-704-366-01	SCREW (CASE) (M3X8)	
5	* 3-337-136-11	COVER, TRANSFORMER SAFETY	
6	* 1-533-213-31	HOLDER, FUSE	
7	* A-2006-511-A	SYSTEM CONTROL BOARD, COMPLETE (WR87ES)	
7	* A-2006-517-A	SYSTEM CONTROL BOARD, COMPLETE (WR775)	

Ref. No.	Part No.	Description	Remark
8	* 3-365-370-01	PANEL, BACK (WR87ES)	
8	* 3-365-371-11	PANEL, BACK (WR775)	
9	* 3-703-244-00	BUSHING (2104), CORD (WR87ES)	
9	* 3-703-571-11	BUSHING (S) (4516), CORD (WR775)	
10	X-3304-938-2	FOOT ASSY (WR87ES)	
10	X-4885-950-1	FOOT ASSY (WR775)	
11	 1-555-465-00	CORD, POWER (WR87ES)	
11	 1-551-506-XX	CORD, POWER (WR775)	
12	4-923-836-11	CUSHION	
13	* 3-346-265-11	HOLDER, PC BOARD	
F701	 1-532-742-11	FUSE, GLASS TUBE (1.6A/125V)	
F702	 1-532-742-11	FUSE, GLASS TUBE (1.6A/125V)	
T701	 1-450-431-11	TRANSFORMER, POWER	

## 6-2. FRONT PANEL SECTION (TC-WR775)

- B : HX-PRO board (A)
- C : HX-PRO board (B)
- D : translation board (A)
- E : translation board (B)
- F : power SW board
- ▲ A : FL board
- ▲ B : HP board



Ref. No.	Part No.	Description	Remark
51	X-3363-192-1	PANEL ASSY, FRONT (WR775)	
52	3-340-188-11	BUTTON (EJECT) (WR775)	
53	3-363-762-01	SPRING, COMPRESSION (WR775)	
54	3-354-932-01	BUTTON (POWER)	
55	X-3340-195-1	HOLDER (R) ASSY, CASSETTE	
56	X-3340-194-1	HOLDER (L) ASSY, CASSETTE	
57	3-308-823-11	SPRING	
58	3-354-960-01	SPRING (LOADING R), TORSION	
59	3-354-959-01	SPRING (LOADING L), TORSION	
60	3-354-963-01	DAMPER	
61	3-354-956-01	LEVER (EJ SAFTY LEVER R)	
62	3-354-955-01	LEVER (EJ SAFTY LEVER L)	
63	3-354-962-01	SPRING (EJ SAFTY SPRING R)	
64	3-354-961-01	SPRING (EJ SAFTY SPRING L)	
65	* 3-354-954-01	LEVER (LOCK LEVER R)	
66	* 3-354-953-01	LEVER (LOCK LEVER L)	
67	3-354-957-01	JOINT (LOCK LEVER)	

Ref. No.	Part No.	Description	Remark
68	* 3-682-419-21	HOLDER, P. C. B	
69	3-367-431-01	KNOB (BAL) (WR775)	
70	3-367-431-11	KNOB (REC) (WR775)	
71	3-356-957-01	SPRING (WR775)	
72	3-365-420-01	HOLDER, FL TUBE	
73	* 9-911-844-XX	CUSHION (WR775)	
74	* A-2006-518-A	PANEL BOARD, COMPLETE (WR775)	
75	4-928-635-01	SCREW, +BV (2.6X8) TAPPING	
76	* 1-575-847-11	WIRE, FLAT TYPE (5 CORE)	
77	* 1-575-851-11	WIRE, FLAT TYPE (7 CORE)	
78	* 1-575-848-11	WIRE, FLAT TYPE (5 CORE)	
79	* 1-575-853-11	WIRE, FLAT TYPE (15 CORE)	
80	1-534-517-00	WIRE, FLAT TYPE (11 CORE)	
81	* 1-575-780-11	WIRE, FLAT TYPE (7 CORE)	
82	* 1-575-850-11	WIRE, FLAT TYPE (9 CORE)	
83	* 1-575-781-11	WIRE, FLAT TYPE (9 CORE)	
FL901	1-519-594-11	INDICATOR TUBE, FLUORESCENT	
S87	1-572-393-11	SWITCH, LEAF (DIRECTION)	

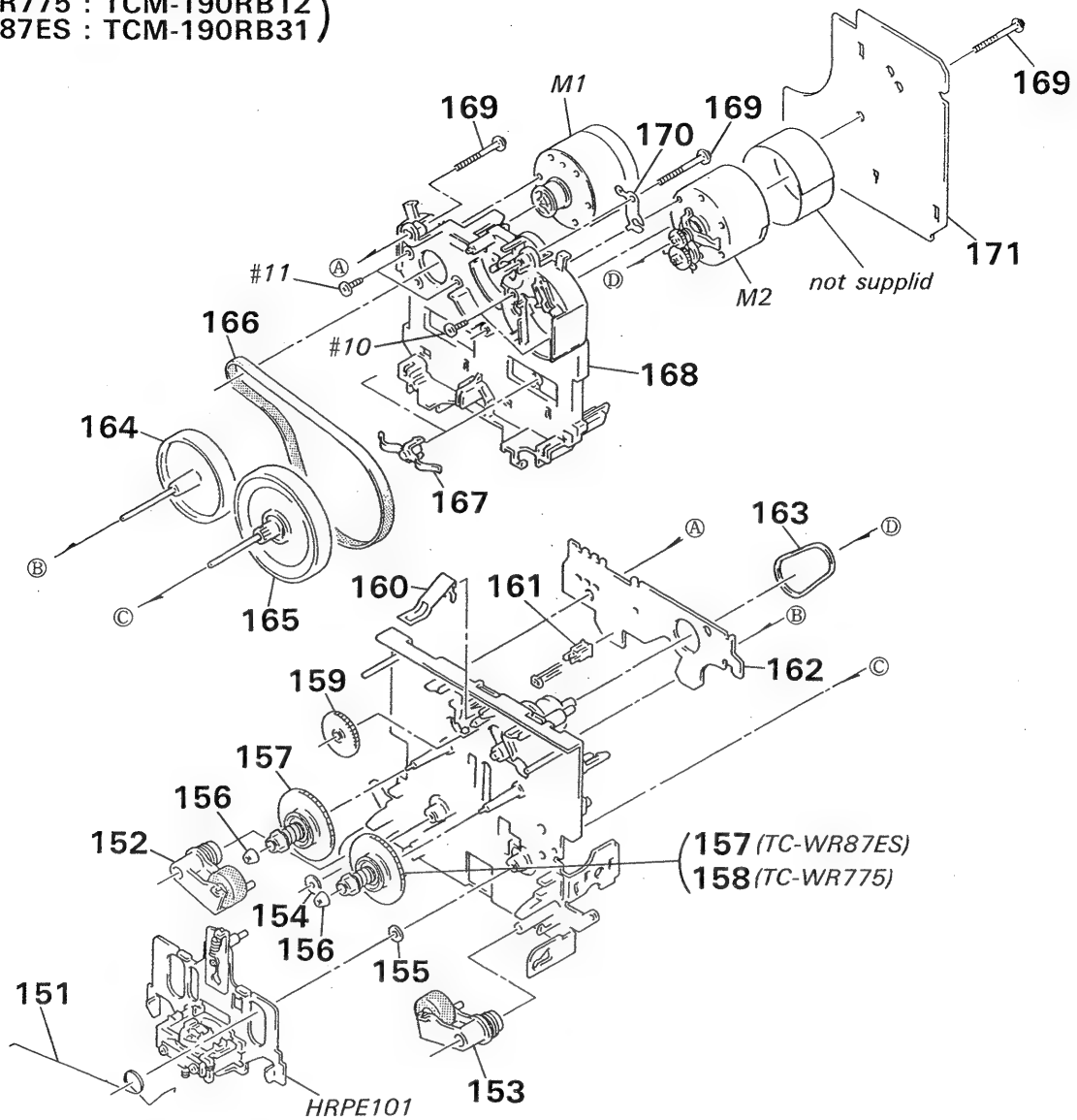
- B : HX-PRO board (A)
- C : HX-PRO board (B)
- D : translation board (A)
- E : translation board (B)
- F : power SW board
- ▲ A : SW (A) board
- ▲ B : SW (B) board
- ▲ C : HP board
- ▲ D : power SW board



- 32 -

# 6-4. MECHANISM SECTION-1

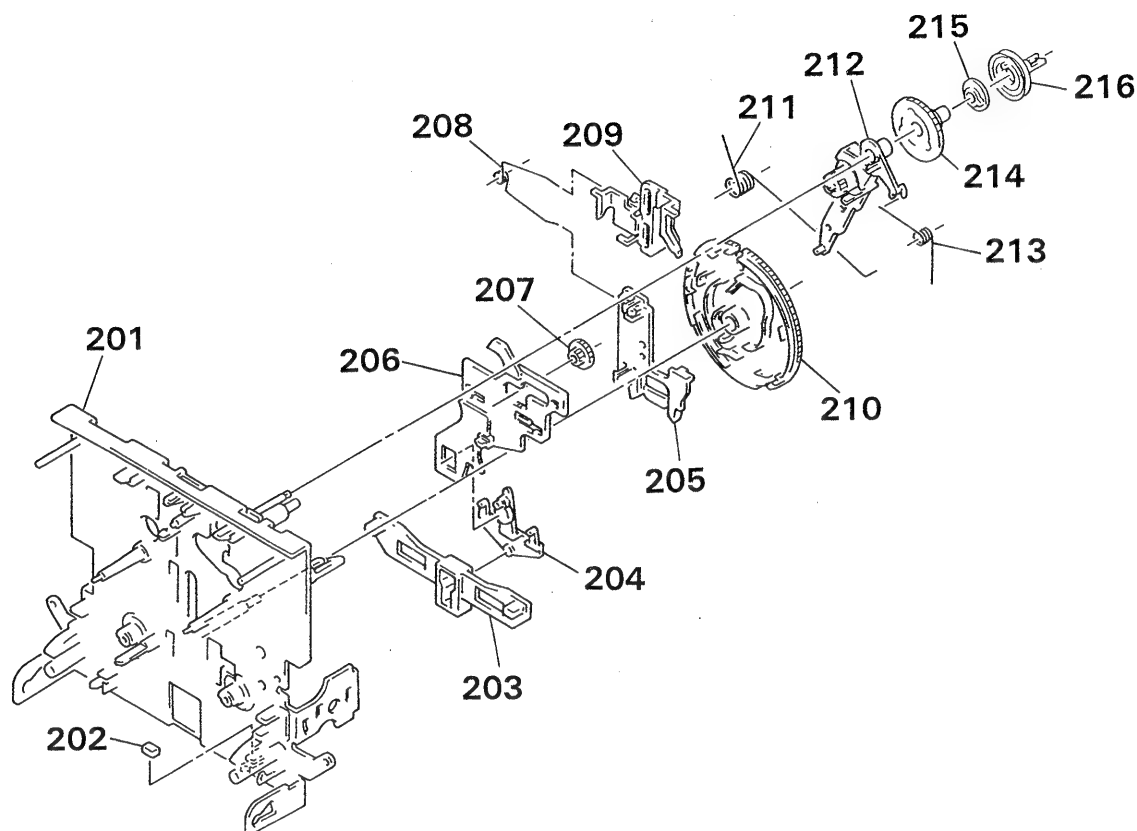
( TC-WR775 : TCM-190RB12 )  
( TC-WR87ES : TCM-190RB31 )



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	3-359-455-01	SPRING, TORSION		164	X-3359-410-1	FLYWHEEL (REV) ASSY	
152	X-3359-409-1	LEVER (PINCH LEVER REV) ASSY		165	X-3359-406-1	FLYWHEEL (FWD) COMPLETE ASSY	
153	X-3359-408-1	LEVER (PINCH LEVER FWD) ASSY		166	3-359-417-01	BELT (FLAT), CAPSTAN	
154	3-356-714-01	WASHER		167	3-575-321-00	RETAINER, THRUST, CAPSTAN	
155	3-356-713-01	WASHER		168	* 3-359-436-01	BASE (THRUST RETAINER), FITTING	
156	3-362-308-01	CAP (REEL)		169	3-359-414-01	SCREW (+PTPW 2X23)	
157	X-3362-078-1	TABLE ASSY (B), REEL (WR87ES)		170	3-359-450-01	PLATE, GROUND	
158	X-3359-404-1	TABLE ASSY, REEL (WR775)		171	* 1-634-842-11	MD-C BOARD	
159	3-359-424-01	GEAR (REV GEAR)		HRPE101	A-2003-420-A	BASE ASSY, HEAD (REC/PB/ERASE) (WR87ES)	
160	3-359-430-01	SPRING (CASSETTE RETAINER), LEAF		HRPE101	A-2003-477-A	BASE ASSY, HEAD (REC/PB/ERASE) (WR775)	
161	3-343-419-01	HOLDER (S SENSOR A)		M1	X-3359-417-1	MOTOR ASSY (CAPSTAN)	
162	* 1-634-841-11	SW-A BOARD		M2	A-2003-474-A	MOTOR ASSY (REEL)	
163	3-359-466-01	BELT (FR), SQUARE					

## 6-5. MECHANISM SECTION-2

( TC-WR775 : TCM-190RB12 )  
 ( TC-WR87ES : TCM-190RB31 )



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
201	X-3359-415-1	CHASSIS ASSY, MECHANICAL		210	3-359-420-01	GEAR (CAM GEAR)	
202	3-359-469-01	SPACER		211	3-359-456-01	SPRING (TRIGGER SPRING), TORSION	
203	* 3-359-425-01	SLIDER (REVERSE SLIDER)		212	X-3359-405-1	LEVER (FR ARM) ASSY	
204	3-359-426-01	LEVER (REVERSE LEVER)		213	3-359-453-01	SPRING (FR ARM), TORSION	
205	* 3-359-427-01	SLIDER (LEVER SLIDER)		214	3-359-419-01	GEAR (FR GEAR)	
206	* 3-359-415-01	SLIDER (TRIGGER SLIDER)		215	3-359-421-01	CLUTCH (REEL DISK)	
207	3-359-448-01	GEAR (TRIGGER)		216	3-359-418-01	PULLEY (FR PULLEY)	
208	3-359-454-01	SPRING, TORSION					
209	3-359-429-01	SLIDER (BRAKE PLATE)					

# SECTION 7 ELECTRICAL PARTS LIST



MD-C


## NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- XX, -X mean standardized parts, so they may have some differences from the original one.
- RESISTORS  
All resistors are in ohms  
METAL: Metal-film resistor  
METAL OXIDE: Metal Oxide-film resistor  
F: nonflammable

- SEMICONDUCTORS  
In each case, u:  $\mu$ , for example:  
uA...:  $\mu$  A..., uPA...:  $\mu$  P A...,  
uPB...:  $\mu$  P B..., uPC...:  $\mu$  P C...,  
uPD...:  $\mu$  P D...
- CAPACITORS  
uF:  $\mu$  F
- COILS  
uH:  $\mu$  H
- WR775: TC-WR775  
WR87ES: TC-WR87ES

When indicating parts by reference number, please include the board name.

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
	1-634-842-11	MD-C BOARD *****		CNP73 *	1-568-828-11	SOCKET, CONNECTOR 9P	
		< CAPACITOR >		CNP75 *	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P	
C11	1-110-342-11	MYLAR 390PF 5% 50V (WR775)				< DIODE >	
C11	1-130-469-00	MYLAR 680PF 5% 50V (WR87ES)		D31	8-719-107-94	DIODE 1SS202-1	
						< IC >	
C12	1-136-157-00	FILM 0.022uF 5% 50V		IC31	8-759-111-44	IC uPC4570C-1	
C13	1-124-282-00	ELECT 22uF 20% 25V				< TRANSISTOR >	
C21	1-110-342-11	MYLAR 390PF 5% 50V (WR775)		Q51	8-729-194-57	TRANSISTOR 2SC945-P	
C21	1-130-469-00	MYLAR 680PF 5% 50V (WR87ES)		Q52	8-729-194-57	TRANSISTOR 2SC945-P	
C22	1-136-157-00	FILM 0.022uF 5% 50V (WR775)		Q53	8-729-801-84	TRANSISTOR 2SB1013-34	
C23	1-124-282-00	ELECT 22uF 20% 25V		Q71	8-729-820-16	TRANSISTOR 2SA1317-S	
C31	1-124-443-00	ELECT 100uF 20% 10V				< RESISTOR >	
C32	1-124-443-00	ELECT 100uF 20% 10V		R11	1-247-881-00	CARBON 120K 5% 1/4W (WR775)	
C33	1-124-119-00	ELECT 330uF 20% 16V		R11	1-249-435-11	CARBON 33K 5% 1/4W (WR87ES)	
C51	1-136-230-00	FILM 0.0022uF 5% 100V		R12	1-249-404-00	CARBON 82 5% 1/4W (WR87ES)	
C52	1-136-230-00	FILM 0.0022uF 5% 100V		R12	1-249-405-11	CARBON 100 5% 1/4W (WR775)	
C53	1-130-856-00	FILM 0.0068uF 5% 100V		R13	1-247-882-11	CARBON 130K 5% 1/4W	
C54	1-136-558-11	FILM 0.0039uF 5% 630V (WR87ES)		R14	1-249-426-11	CARBON 5.6K 5% 1/4W	
C54	1-136-601-11	FILM 0.01uF 5% 630V (WR775)		R21	1-247-881-00	CARBON 120K 5% 1/4W (WR775)	
C55	1-161-494-00	CERAMIC 0.022uF 25V		R21	1-249-435-11	CARBON 33K 5% 1/4W (WR87ES)	
C56	1-126-157-11	ELECT 10uF 20% 16V		R22	1-249-404-00	CARBON 82 5% 1/4W (WR87ES)	
C71	1-124-907-11	ELECT 10uF 20% 50V		R22	1-249-405-11	CARBON 100 5% 1/4W (WR775)	
C72	1-124-907-11	ELECT 10uF 20% 50V		R23	1-247-882-11	CARBON 130K 5% 1/4W	
		< CONNECTOR >		R24	1-249-426-11	CARBON 5.6K 5% 1/4W	
CNP31 *	1-568-824-11	SOCKET, CONNECTOR 5P		R31	1-249-409-11	CARBON 220 5% 1/4W	
CNP32 *	1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P		R32	1-249-409-11	CARBON 220 5% 1/4W	
CNP34 *	1-565-344-11	PIN, CONNECTOR (PC BOARD) 8P					
CNP71 *	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P					
CNP72 *	1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P					

MD-C

SW-A



PANEL

INCLUDING SW(A), SW(B), HP, POWER SW, FL


Ref.No.	Part No.	Description	Remark		
R51	1-249-437-11	CARBON	47K	5%	1/4W (WR87ES)
R51	1-249-441-11	CARBON	100K	5%	1/4W (WR775)
R52	1-249-437-11	CARBON	47K	5%	1/4W (WR87ES)
R52	1-249-441-11	CARBON	100K	5%	1/4W (WR775)
R53	1-249-429-11	CARBON	10K	5%	1/4W
R54	△ 1-212-849-00	FUSIBLE	4.7	5%	1/4W F (WR87ES)
R54	△ 1-212-851-00	FUSIBLE	5.6	5%	1/4W F (WR775)
R55	1-249-429-11	CARBON	10K	5%	1/4W
R71	1-247-864-11	CARBON	24K	5%	1/4W
R72	1-249-433-11	CARBON	22K	5%	1/4W
R73	1-249-437-11	CARBON	47K	5%	1/4W
R74	1-249-437-11	CARBON	47K	5%	1/4W
< VARIABLE RESISTOR >					
RV11	1-238-597-11	RES. ADJ. CARBON 1K			
RV21	1-238-597-11	RES. ADJ. CARBON 1K			
RV71	1-238-600-11	RES. ADJ. CARBON 10K			
RV72	1-238-600-11	RES. ADJ. CARBON 10K			
< RELAY >					
RY31	1-515-726-11	RELAY			
< TRANSFORMER >					
T51	1-433-366-11	TRANSFORMER, BIAS OSCILLATION			
*****					
* 1-634-841-11 SW-A BOARD					
*****					
3-343-419-01 HOLDER (S SENSER A)					
< CONNECTOR >					
CNP81	* 1-568-852-11	SOCKET, CONNECTOR 9P			
< IC >					
IC81	8-719-710-03	PHOTO SENSOR NJL5165K-B			
IC82	8-719-710-03	PHOTO SENSOR NJL5165K-B (WR87ES)			
< RESISTOR >					
R81	1-249-414-11	CARBON	560	5%	1/4W
R82	1-247-818-11	CARBON	300	5%	1/4W
R83	1-247-834-11	CARBON	1.3K	5%	1/4W
R84	1-249-417-11	CARBON	1K	5%	1/4W
R85	1-249-408-11	CARBON	180	5%	1/4W
R86	1-249-408-11	CARBON	180	5%	1/4W (WR87ES)

Ref.No.	Part No.	Description	Remark		
< SWITCH >					
S81	1-571-958-11	SWITCH, PUSH (1 KEY) (STOP)			
S82	1-571-281-21	SWITCH, LEAF (CrO2)			
S83	1-571-281-21	SWITCH, LEAF (METAL)			
S84	1-571-281-21	SWITCH, LEAF (ERASE PROOF A)			
S85	1-571-281-21	SWITCH, LEAF (ERASE PROOF B)			
S86	1-571-281-21	SWITCH, LEAF (HALF)			
*****					
* A-2006-512-A PANEL BOARD, COMPLETE (INCLUDING SW(A)					
, SW(B), HP, POWER SW BOARD) (WR87ES)					
* A-2006-518-A PANEL BOARD, COMPLETE					
(INCLUDING FL, HP BOARD) (WR775)					
*****					
9-911-844-XX CUSHION					
3-365-420-01 HOLDER, FL TUBE					
< CAPACITOR >					
C901	1-164-159-11	CERAMIC	0.1uF		50V
C902	1-124-443-11	ELECT	100uF	20%	6.3V (WR87ES)
C902	1-128-340-91	ELECT	100uF	20%	6.3V (WR775)
C903	1-164-159-11	CERAMIC	0.1uF		50V
< CONNECTOR >					
CN901	* 1-568-834-11	SOCKET, CONNECTOR 15P (WR87ES)			
CN901	* 1-568-858-11	SOCKET, CONNECTOR 15P (WR775)			
CN902	* 1-568-830-11	SOCKET, CONNECTOR 11P			
CN904	* 1-564-498-11	PIN, CONNECTOR 5P (WR87ES)			
CN905	* 1-564-498-11	PIN, CONNECTOR 5P (WR87ES)			
CN906	* 1-564-498-11	PIN, CONNECTOR 5P (WR87ES)			
< CIRCUIT BLOCK >					
CP901	1-232-946-11	COMPOSITION CIRCUIT BLOCK (10kX4)			
CP902	1-239-059-11	COMPOSITION CIRCUIT BLOCK (2.2kX4)			
CP903	1-233-199-11	COMPOSITION CIRCUIT BLOCK (10kX8)			
CP904	1-239-060-11	COMPOSITION CIRCUIT BLOCK (100kX8)			
< FLUORESCENT INDICATOR >					
FL901	1-519-594-11	INDICATOR TUBE, FLUORESCENT			
< IC >					
IC901	8-759-636-52	IC M50941-581SP (WR87ES)			
IC901	8-759-636-78	IC M50941-580SP (WR775)			
IC902	8-741-100-48	IC SBX1610-59			

Note:

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

Note:

Les composants identifiés par une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

**PANEL**

INCLUDING SW(A), SW(B), HP, POWER SW, FL

Ref. No.	Part No.	Description	Remark
		< JACK >	
J501	1-507-796-71	JACK (PHONES)	
		< TRANSISTOR >	
Q901	8-729-900-65	TRANSISTOR DTA144ES	
Q902	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q903	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q904	8-729-900-74	TRANSISTOR DTC143TS	
Q905	8-729-900-65	TRANSISTOR DTA144ES	
Q906	8-729-900-65	TRANSISTOR DTA144ES	
Q907	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q908	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q909	8-729-620-05	TRANSISTOR 2SC2603-EF	
		< RESISTOR >	
R901	1-247-903-00	CARBON 1M 5% 1/4W	
R902	1-249-417-11	CARBON 1K 5% 1/4W	
R903	1-249-437-11	CARBON 47K 5% 1/4W	
R904	1-249-430-11	CARBON 12K 5% 1/4W	
R905	1-247-887-00	CARBON 220K 5% 1/4W	
R906	1-247-887-00	CARBON 220K 5% 1/4W	
R907	1-247-887-00	CARBON 220K 5% 1/4W	
R908	1-247-887-00	CARBON 220K 5% 1/4W	
R909	1-249-433-11	CARBON 22K 5% 1/4W	
R910	1-249-424-11	CARBON 3.9K 5% 1/4W	
R911	1-249-437-11	CARBON 47K 5% 1/4W	
R912	1-249-437-11	CARBON 47K 5% 1/4W	
R921	1-249-407-11	CARBON 150 5% 1/4W	
R922	1-249-409-11	CARBON 220 5% 1/4W	
R923	1-249-411-11	CARBON 330 5% 1/4W	
R924	1-249-413-11	CARBON 470 5% 1/4W	
R925	1-249-415-11	CARBON 680 5% 1/4W	
R926	1-249-417-11	CARBON 1K 5% 1/4W	
R927	1-249-420-11	CARBON 1.8K 5% 1/4W	
R928	1-249-424-11	CARBON 3.9K 5% 1/4W	
R929	1-249-407-11	CARBON 150 5% 1/4W	
R930	1-249-409-11	CARBON 220 5% 1/4W	
R931	1-249-411-11	CARBON 330 5% 1/4W	
R932	1-249-413-11	CARBON 470 5% 1/4W	
R933	1-249-415-11	CARBON 680 5% 1/4W	
R934	1-249-417-11	CARBON 1K 5% 1/4W	
R935	1-249-420-11	CARBON 1.8K 5% 1/4W	
R936	1-249-424-11	CARBON 3.9K 5% 1/4W (WR87ES)	
R937	1-249-407-11	CARBON 150 5% 1/4W	
R938	1-249-409-11	CARBON 220 5% 1/4W	
R939	1-249-411-11	CARBON 330 5% 1/4W	
R940	1-249-413-11	CARBON 470 5% 1/4W	
R941	1-249-415-11	CARBON 680 5% 1/4W	

Ref. No.	Part No.	Description	Remark
R942	1-249-417-11	CARBON 1K 5% 1/4W	
R943	1-249-420-11	CARBON 1.8K 5% 1/4W	
R944	1-249-424-11	CARBON 3.9K 5% 1/4W	
R945	1-249-430-11	CARBON 12K 5% 1/4W	
R946	1-249-407-11	CARBON 150 5% 1/4W	
R950	1-249-430-11	CARBON 12K 5% 1/4W (WR87ES)	
R951	1-249-429-11	CARBON 10K 5% 1/4W (WR87ES)	
		< VARIABLE RESISTOR >	
RV501	1-241-503-11	RES. VAR. CARBON 50K/50K (BALANCE)	
RV502	1-241-502-11	RES. VAR. CARBON 50K/50K (REC LEVEL)	
RV901	1-241-134-11	RES. VAR. CARBON 20K (BIAS) (WR87ES)	
		< SWITCH >	
S901	1-554-303-21	SWITCH, TACTILE (HIGH SPEED SYNCHRO DUBBING)	
S902	1-554-303-21	SWITCH, TACTILE (NORM SPEED SYNCHRO DUBBING)	
S903	1-554-303-21	SWITCH, TACTILE (REC A+B)	
S904	1-554-303-21	SWITCH, TACTILE (AUTO PAUSE)	
S905	1-554-303-21	SWITCH, TACTILE (BLANK SKIP)	
S906	1-554-303-21	SWITCH, TACTILE (RESET A)	
S908	1-554-303-21	SWITCH, TACTILE (RESET B)	
S909	1-554-303-21	SWITCH, TACTILE (MEMORY)	
S910	1-554-303-21	SWITCH, TACTILE (STOP A)	
S911	1-554-303-21	SWITCH, TACTILE (FWD A)	
S912	1-554-303-21	SWITCH, TACTILE (REV A)	
S913	1-554-303-21	SWITCH, TACTILE (PAUSE A)	
S914	1-554-303-21	SWITCH, TACTILE (REC MUTE A)	
S915	1-554-303-21	SWITCH, TACTILE (REW A)	
S916	1-554-303-21	SWITCH, TACTILE (FF A)	
S917	1-554-303-21	SWITCH, TACTILE (REC A)	
S918	1-554-303-21	SWITCH, TACTILE (STOP B)	
S919	1-554-303-21	SWITCH, TACTILE (FWD B)	
S920	1-554-303-21	SWITCH, TACTILE (REV B)	
S921	1-554-303-21	SWITCH, TACTILE (PAUSE B)	
S922	1-554-303-21	SWITCH, TACTILE (REC MUTE B)	
S923	1-554-303-21	SWITCH, TACTILE (REW B)	
S924	1-554-303-21	SWITCH, TACTILE (FF B)	
S925	1-554-303-21	SWITCH, TACTILE (REC B)	
S926	1-571-520-11	SWITCH, SLIDE (DIRECTION) (WR87ES)	
S926	1-572-401-11	SWITCH, SLIDE (DIRECTION) (WR775)	
S927	1-571-520-11	SWITCH, SLIDE (B DECK DOLBY) (WR87ES)	
S927	1-572-401-11	SWITCH, SLIDE (B DECK DOLBY) (WR775)	
S928	1-571-520-11	SWITCH, SLIDE (TIMER OFF) (WR87ES)	



**PANEL**

INCLUDING SW(A), SW(B), HP, POWER SW, FL

**SYSTEM CONTROL**

INCLUDING HX PRO(A), HX PRO(B), TRANSLATION(A), TRANSLATION(B), MPX, POWER SW

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
< CERAMIC >							
X901	1-577-358-21	VIBRATOR, CERAMIC (4MHz)		C221	1-124-907-11	ELECT 10uF 20% 50V	
*****				C222	1-124-907-11	ELECT 10uF 20% 50V	
* A-2006-511-A SYSTEM CONTROL BOARD, COMPLETE (INCLUDING				C224	1-124-902-00	ELECT 0.47uF 20% 50V	
HX PRO (A), HX PRO (B), TRANSLATION (A),				C231	1-123-382-00	ELECT 3.3uF 20% 100V	
TRANSLATION (B), MPX BOARD) (WR87ES)				C251	1-124-907-11	ELECT 10uF 20% 50V	
* A-2006-517-A SYSTEM CONTROL BOARD, COMPLETE (INCLUDING				C252	1-124-907-11	ELECT 10uF 20% 50V	
HX PRO (A), HX PRO (B), TRANSLATION (A),				C254	1-124-902-00	ELECT 0.47uF 20% 50V	
TRANSLATION (B), POWER SW BOARD) (WR775)				C281	1-126-096-11	ELECT 10uF 20% 25V (WR87ES)	
*****				C391	1-136-273-91	FILM 75PF 5% 630V (WR775)	
* 1-533-213-31 HOLDER, FUSE				C391	1-136-935-11	FILM 22PF 5% 630V (WR87ES)	
* 1-533-213-31 HOLDER, FUSE				C392	1-162-285-31	CERAMIC 180PF 10% 50V (WR87ES)	
7-685-646-79 SCREW +BVTP 3X8 TYPE2 SLIT				C392	1-162-288-31	CERAMIC 330PF 10% 50V (WR775)	
7-682-547-04 SCREW +BVTT 3X6 (S)				C393	1-130-468-00	MYLAR 560PF 5% 50V (WR87ES)	
< CAPACITOR >				C393	1-130-472-00	MYLAR 0.0012uF 5% 50V (WR775)	
C101	1-136-157-00	FILM 0.022uF 5% 50V		C394	1-136-433-11	FILM 100PF 5% 630V	
C102	1-162-294-31	CERAMIC 0.001uF 10% 50V		C395	1-136-272-00	FILM 68PF 5% 630V (WR87ES)	
C103	1-161-375-00	CERAMIC 0.0022uF 20% 50V		C395	1-136-437-11	FILM 220PF 5% 630V (WR775)	
C104	1-130-475-00	MYLAR 0.0022uF 5% 50V		C396	1-136-165-00	FILM 0.1uF 5% 50V	
C105	1-130-475-00	MYLAR 0.0022uF 5% 50V		C397	1-136-157-00	FILM 0.022uF 5% 50V	
C106	1-136-174-00	FILM 0.56uF 5% 50V		C398	1-136-153-00	FILM 0.01uF 5% 50V	
C107	1-136-171-00	FILM 0.33uF 5% 50V		C491	1-136-273-91	FILM 75PF 5% 630V (WR775)	
C108	1-124-907-11	ELECT 10uF 20% 50V		C491	1-136-935-11	FILM 22PF 5% 630V (WR87ES)	
C109	1-124-126-00	ELECT 47uF 20% 10V		C492	1-162-285-31	CERAMIC 180PF 10% 50V (WR87ES)	
C110	1-124-907-11	ELECT 10uF 20% 50V		C492	1-162-288-31	CERAMIC 330PF 10% 50V (WR775)	
C111	1-124-903-11	ELECT 1uF 20% 50V		C493	1-130-468-00	MYLAR 560PF 5% 50V (WR87ES)	
C121	1-124-907-11	ELECT 10uF 20% 50V		C493	1-130-472-00	MYLAR 0.0012uF 5% 50V (WR775)	
C122	1-124-907-11	ELECT 10uF 20% 50V		C494	1-136-433-11	FILM 100PF 5% 630V	
C124	1-124-902-00	ELECT 0.47uF 20% 50V		C495	1-136-272-00	FILM 68PF 5% 630V (WR87ES)	
C131	1-123-382-00	ELECT 3.3uF 20% 100V		C495	1-136-437-11	FILM 220PF 5% 630V (WR775)	
C151	1-124-907-11	ELECT 10uF 20% 50V		C496	1-136-165-00	FILM 0.1uF 5% 50V	
C152	1-124-907-11	ELECT 10uF 20% 50V		C497	1-136-157-00	FILM 0.022uF 5% 50V	
C154	1-124-902-00	ELECT 0.47uF 20% 50V		C498	1-136-153-00	FILM 0.01uF 5% 50V	
C181	1-126-096-11	ELECT 10uF 20% 25V (WR87ES)		C506	1-124-903-11	ELECT 1uF 20% 50V	
C201	1-136-157-00	FILM 0.022uF 5% 50V		C542	1-124-925-11	ELECT 2.2uF 20% 100V	
C202	1-162-294-31	CERAMIC 0.001uF 10% 50V		C591	1-126-927-11	ELECT 2200uF 20% 10V	
C203	1-161-375-00	CERAMIC 0.0022uF 20% 50V		C592	1-124-589-11	ELECT 47uF 20% 16V (WR87ES)	
C204	1-130-475-00	MYLAR 0.0022uF 5% 50V		C593	1-124-589-11	ELECT 47uF 20% 16V (WR87ES)	
C205	1-130-475-00	MYLAR 0.0022uF 5% 50V		C599	1-124-925-11	ELECT 2.2uF 20% 100V	
C206	1-136-174-00	FILM 0.56uF 5% 50V		C601	1-124-925-11	ELECT 2.2uF 20% 100V	
C207	1-136-171-00	FILM 0.33uF 5% 50V		C602	1-162-286-31	CERAMIC 220PF 10% 50V	
C208	1-124-907-11	ELECT 10uF 20% 50V		C603	1-162-286-31	CERAMIC 220PF 10% 50V	
C209	1-124-126-00	ELECT 47uF 20% 10V		C604	1-124-925-11	ELECT 2.2uF 20% 100V	
C210	1-124-907-11	ELECT 10uF 20% 50V		C605	1-136-157-00	FILM 0.022uF 5% 50V	
C211	1-124-903-11	ELECT 1uF 20% 50V					

## SYSTEM CONTROL

INCLUDING HX PRO(A), HX PRO(B), TRANSLATION(A), TRANSLATION(B), MPX, POWER SW

Ref. No.	Part No.	Description	Remark
C608	1-124-925-11	ELECT	2.2uF 20% 100V
C691	1-107-046-00	MICA	4.7PF 500V
C692	1-124-126-00	ELECT	47uF 20% 10V
C693	1-126-101-11	ELECT	100uF 20% 16V
C694	1-124-902-00	ELECT	0.47uF 20% 50V
C701	1-124-443-00	ELECT	100uF 20% 10V
C702	1-124-122-11	ELECT	100uF 20% 50V
C703	1-124-925-11	ELECT	2.2uF 20% 100V
C704	1-124-911-11	ELECT	220uF 20% 50V
C705	1-124-927-11	ELECT	4.7uF 20% 100V
C707	1-124-925-11	ELECT	2.2uF 20% 100V
C708	1-124-564-11	ELECT	4700uF 20% 25V
C709	1-124-126-00	ELECT	47uF 20% 10V
C710	1-126-927-11	ELECT	2200uF 20% 10V
C711	1-126-927-11	ELECT	2200uF 20% 10V
C712	1-126-946-11	ELECT	6800uF 20% 25V
C713	1-161-494-00	CERAMIC	0.022uF 25V
C801	1-124-443-00	ELECT	100uF 20% 10V
C802	1-164-159-11	CERAMIC	0.1uF 50V
C803	1-164-159-11	CERAMIC	0.1uF 50V
C804	1-124-443-00	ELECT	100uF 20% 10V
C805	1-124-925-11	ELECT	2.2uF 20% 100V
C806	1-136-165-00	FILM	0.1uF 5% 50V
C807	1-136-165-00	FILM	0.1uF 5% 50V
C851	1-124-902-00	ELECT	0.47uF 20% 50V
C861	1-162-294-31	CERAMIC	0.001uF 10% 50V
C0391	1-136-273-91	FILM	75PF 5% 630V (WR775)
C0391	1-136-935-11	FILM	22PF 5% 630V (WR87ES)
C0392	1-162-285-31	CERAMIC	180PF 10% 50V (WR87ES)
C0392	1-162-288-31	CERAMIC	330PF 10% 50V (WR775)
C0393	1-130-468-00	MYLAR	560PF 5% 50V (WR87ES)
C0393	1-130-472-00	MYLAR	0.0012uF 5% 50V (WR775)
C0394	1-136-433-11	FILM	100PF 5% 630V
C0395	1-136-272-00	FILM	68PF 5% 630V (WR87ES)
C0395	1-136-437-11	FILM	220PF 5% 630V (WR775)
C0396	1-136-165-00	FILM	0.1uF 5% 50V
C0397	1-136-157-00	FILM	0.022uF 5% 50V
C0398	1-136-153-00	FILM	0.01uF 5% 50V
C0491	1-136-273-91	FILM	75PF 5% 630V (WR775)
C0491	1-136-935-11	FILM	22PF 5% 630V (WR87ES)
C0492	1-162-285-31	CERAMIC	180PF 10% 50V (WR87ES)
C0492	1-162-288-31	CERAMIC	330PF 10% 50V (WR775)
C0493	1-130-468-00	MYLAR	560PF 5% 50V (WR87ES)
C0493	1-130-472-00	MYLAR	0.0012uF 5% 50V (WR775)

Ref. No.	Part No.	Description	Remark
C0494	1-136-433-11	FILM	100PF 5% 630V
C0495	1-136-272-00	FILM	68PF 5% 630V (WR87ES)
C0495	1-136-437-11	FILM	220PF 5% 630V (WR775)
C0496	1-136-165-00	FILM	0.1uF 5% 50V
C0497	1-136-157-00	FILM	0.022uF 5% 50V
C0498	1-136-153-00	FILM	0.01uF 5% 50V
C0691	1-107-046-00	MICA	4.7PF 500V
C0692	1-124-126-00	ELECT	47uF 20% 10V
C0693	1-126-101-11	ELECT	100uF 20% 16V
C0694	1-124-902-00	ELECT	0.47uF 20% 50V

## &lt; CONNECTOR &gt;

CN501	* 1-568-824-11	SOCKET, CONNECTOR 5P
CN502	* 1-568-824-11	SOCKET, CONNECTOR 5P
CN503	* 1-568-826-11	SOCKET, CONNECTOR 7P
CN504	* 1-568-826-11	SOCKET, CONNECTOR 7P
CN505	* 1-564-337-00	PIN, CONNECTOR 3P (WR775)
CN505	* 1-568-824-11	SOCKET, CONNECTOR 5P (WR87ES)
CN506	* 1-568-848-11	SOCKET, CONNECTOR 5P (WR87ES)
CN601	* 1-564-509-11	PLUG, CONNECTOR 6P
CN691	* 1-568-826-11	SOCKET, CONNECTOR 7P
CN701	* 1-564-338-00	PIN, CONNECTOR 4P (WR87ES)
CN701	* 1-564-339-00	PIN, CONNECTOR 5P (WR775)
CN703	* 1-564-510-11	PLUG, CONNECTOR 7P
CN801	* 1-568-830-11	SOCKET, CONNECTOR 11P
CN802	* 1-568-828-11	SOCKET, CONNECTOR 9P
CN803	* 1-568-828-11	SOCKET, CONNECTOR 9P
CN804	* 1-568-828-11	SOCKET, CONNECTOR 9P
CN805	* 1-568-828-11	SOCKET, CONNECTOR 9P
CN806	* 1-568-834-11	SOCKET, CONNECTOR 15P
CN0691	* 1-568-826-11	SOCKET, CONNECTOR 7P
GNP506	* 1-564-505-11	PLUG, CONNECTOR 2P (WR87ES)
CNP691	* 1-565-347-11	SOCKET, CONNECTOR (PC BOARD) 8P
CNP0691*	* 1-565-347-11	SOCKET, CONNECTOR (PC BOARD) 8P

## &lt; DIODE &gt;

D131	8-719-912-20	DIODE 1SS120
D231	8-719-912-20	DIODE 1SS120
D501	8-719-912-20	DIODE 1SS120
D502	8-719-912-20	DIODE 1SS120
D503	8-719-933-54	DIODE HZS9A2L
D571	8-719-912-20	DIODE 1SS120
D572	8-719-001-36	DIODE UZL-11L2
D601	8-719-912-20	DIODE 1SS120
D602	8-719-912-20	DIODE 1SS120
D701	8-719-000-78	DIODE HZS7AIL

# SYSTEM CONTROL

INCLUDING HX PRO(A), HX PRO(B), TRANSLATION(A), TRANSLATION(B), MPX, POWER SW

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
D702	8-719-912-20	DIODE 1SS120				< FILTER >	
D703	8-719-200-77	DIODE 10E2N		LPF101	1-231-388-00	FILTER, LOW PASS (WR775)	
D704	8-719-200-77	DIODE 10E2N		LPF101	1-236-147-11	FILTER, LOW PASS (WR87ES)	
D705	8-719-200-77	DIODE 10E2N					
D706	8-719-912-20	DIODE 1SS120		LPF201	1-231-388-00	FILTER, LOW PASS (WR775)	
				LPF201	1-236-147-11	FILTER, LOW PASS (WR87ES)	
D707	8-719-200-77	DIODE 10E2N				< TRANSISTOR >	
D708	8-719-200-77	DIODE 10E2N		Q101	8-729-900-74	TRANSISTOR DTC143TS	
D709	8-719-933-33	DIODE HZS7A1L		Q102	8-729-900-74	TRANSISTOR DTC143TS	
D710	8-719-200-77	DIODE 10E2N		Q121	8-729-821-31	TRANSISTOR 2SD1012-FG	
D711	8-719-200-77	DIODE 10E2N		Q171	8-729-821-31	TRANSISTOR 2SD1012-FG	
				Q201	8-729-900-74	TRANSISTOR DTC143TS	
D712	8-719-933-33	DIODE HZS7A1L					
D713	8-719-000-93	DIODE UZL-7H1		Q202	8-729-900-74	TRANSISTOR DTC143TS	
D801	8-719-912-20	DIODE 1SS120		Q221	8-729-821-31	TRANSISTOR 2SD1012-FG	
D811	8-719-912-20	DIODE 1SS120		Q271	8-729-821-31	TRANSISTOR 2SD1012-FG	
D812	8-719-912-20	DIODE 1SS120		Q501	8-729-900-65	TRANSISTOR DTA144ES	
		< IC >		Q502	8-729-900-65	TRANSISTOR DTA144ES	
IC501	8-752-035-94	IC CXA1331S					
IC503	8-759-945-58	IC RC4558P		Q503	8-729-900-65	TRANSISTOR DTA144ES	
IC504	8-759-945-58	IC RC4558P		Q504	8-729-900-65	TRANSISTOR DTA144ES	
IC506	8-759-140-53	IC uPD4053BC		Q505	8-729-900-89	TRANSISTOR DTC144ES	
IC509	8-752-038-02	IC CXA1198AP		Q521	8-729-900-61	TRANSISTOR DTA114ES	
				Q551	8-729-900-61	TRANSISTOR DTA114ES	
IC510	8-759-208-06	IC TC4051BPHB					
IC511	8-752-038-02	IC CXA1198AP		Q552	8-729-821-31	TRANSISTOR 2SD1012-FG	
				Q553	8-729-821-31	TRANSISTOR 2SD1012-FG	
IC601	8-759-634-50	IC M5218AL (WR87ES)		Q571	8-729-900-65	TRANSISTOR DTA144ES	
IC601	8-759-634-51	IC M5218AP (WR775)		Q572	8-729-821-04	TRANSISTOR 2SA1317-STU	
				Q601	8-729-900-89	TRANSISTOR DTC144ES	
IC691	8-759-106-56	IC uPC1297CA					
IC701	8-759-945-58	IC RC4558P		Q701	8-729-111-55	TRANSISTOR 2SD1312-K	
IC802	8-759-635-94	IC M50925SP-482SP		Q702	8-729-620-05	TRANSISTOR 2SC2603-EF	
IC803	8-759-634-84	IC M50255P		Q703	8-729-821-04	TRANSISTOR 2SA1317-STU	
IC804	8-759-240-50	IC TC4050BP		Q704	8-729-924-90	TRANSISTOR 2SB1370-EF	
				Q705	8-729-924-90	TRANSISTOR 2SB1370-EF	
IC805	8-759-207-05	IC TA7272P					
IC806	8-759-000-48	IC MC14052BCP		Q706	8-729-900-85	TRANSISTOR DTC144WS	
IC807	8-759-000-48	IC MC14052BCP		Q707	8-729-111-55	TRANSISTOR 2SD1312-K	
IC0691	8-759-106-56	IC uPC1297CA		Q708	8-729-900-89	TRANSISTOR DTC144ES	
		< JACK >		Q801	8-729-801-84	TRANSISTOR 2SB1013-3	
J301	1-565-258-11	JACK, PIN 4P (LINE IN/OUT) (WR775)		Q802	8-729-801-84	TRANSISTOR 2SB1013-3	
J301	1-568-069-11	JACK, PIN 4P (INLE IN/OUT) (WR87ES)					
		< COIL >		Q803	8-729-900-61	TRANSISTOR DTA114ES	
L391	1-410-780-11	INDUCTOR 27mH		Q804	8-729-900-80	TRANSISTOR DTC114ES	
L491	1-410-780-11	INDUCTOR 27mH		Q805	8-729-900-61	TRANSISTOR DTA114ES	
L0391	1-410-780-11	INDUCTOR 27mH		Q806	8-729-900-61	TRANSISTOR DTA114ES	
L0491	1-410-780-11	INDUCTOR 27mH		Q807	8-729-821-04	TRANSISTOR 2SA1317-STU	
				Q851	8-729-900-61	TRANSISTOR DTA114ES	
				Q852	8-729-900-89	TRANSISTOR DTC144ES	
				Q853	8-729-900-61	TRANSISTOR DTA114ES	
				Q854	8-729-900-89	TRANSISTOR DTC144ES	
				Q891	8-729-900-61	TRANSISTOR DTA114ES	

## SYSTEM CONTROL

INCLUDING HX PRO(A), HX PRO(B), TRANSLATION(A), TRANSLATION(B), MPX, POWER SW

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
< RESISTOR >						R231	1-249-408-11	CARBON	180	5%	1/4W
R101	1-249-423-11	CARBON	3.3K	5%	1/4W	R232	1-247-870-11	CARBON	43K	5%	1/4W
R102	1-247-887-00	CARBON	220K	5%	1/4W	R233	1-249-421-11	CARBON	2.2K	5%	1/4W
R103	1-249-441-11	CARBON	100K	5%	1/4W	R234	1-249-435-11	CARBON	33K	5%	1/4W
R104	1-249-423-11	CARBON	3.3K	5%	1/4W	R251	1-249-425-11	CARBON	4.7K	5%	1/4W
R105	1-249-428-11	CARBON	8.2K	5%	1/4W	R253	1-249-421-11	CARBON	2.2K	5%	1/4W
R106	1-247-864-11	CARBON	24K	5%	1/4W	R255	1-249-426-11	CARBON	5.6K	5%	1/4W
R107	1-249-414-11	CARBON	560	5%	1/4W	R256	1-249-429-11	CARBON	10K	5%	1/4W
R119	1-249-421-11	CARBON	2.2K	5%	1/4W	R271	1-249-433-11	CARBON	22K	5%	1/4W
R121	1-249-425-11	CARBON	4.7K	5%	1/4W	R272	1-249-417-11	CARBON	1K	5%	1/4W
R124	1-249-426-11	CARBON	5.6K	5%	1/4W	R273	1-249-430-11	CARBON	12K	5%	1/4W (WR775)
R125	1-249-421-11	CARBON	2.2K	5%	1/4W	R273	1-249-431-11	CARBON	15K	5%	1/4W (WR87ES)
R126	1-249-429-11	CARBON	10K	5%	1/4W	R274	1-249-421-11	CARBON	2.2K	5%	1/4W
R131	1-249-408-11	CARBON	180	5%	1/4W	R281	1-249-429-11	CARBON	10K	5%	1/4W (WR775)
R132	1-247-870-11	CARBON	43K	5%	1/4W	R281	1-249-433-11	CARBON	22K	5%	1/4W (WR87ES)
R133	1-249-421-11	CARBON	2.2K	5%	1/4W	R282	1-249-421-11	CARBON	2.2K	5%	1/4W (WR87ES)
R134	1-249-435-11	CARBON	33K	5%	1/4W	R283	1-249-433-11	CARBON	22K	5%	1/4W (WR87ES)
R151	1-249-425-11	CARBON	4.7K	5%	1/4W	R284	1-249-405-11	CARBON	100	5%	1/4W (WR775)
R153	1-249-421-11	CARBON	2.2K	5%	1/4W	R284	1-249-409-11	CARBON	220	5%	1/4W (WR87ES)
R155	1-249-426-11	CARBON	5.6K	5%	1/4W	R291	1-249-420-11	CARBON	1.8K	5%	1/4W
R156	1-249-429-11	CARBON	10K	5%	1/4W	R391	1-249-428-11	CARBON	8.2K	5%	1/4W (WR87ES)
R171	1-249-433-11	CARBON	22K	5%	1/4W	R391	1-249-430-11	CARBON	12K	5%	1/4W (WR775)
R172	1-249-417-11	CARBON	1K	5%	1/4W	R392	1-247-883-00	CARBON	150K	5%	1/4W (WR775)
R173	1-249-430-11	CARBON	12K	5%	1/4W (WR775)	R392	1-247-884-11	CARBON	160K	5%	1/4W (WR87ES)
R173	1-249-431-11	CARBON	15K	5%	1/4W (WR87ES)	R393	△ 1-212-857-00	FUSIBLE	10	5%	1/4W F
R174	1-249-421-11	CARBON	2.2K	5%	1/4W	R394	1-249-431-11	CARBON	15K	5%	1/4W (WR775)
R181	1-249-429-11	CARBON	10K	5%	1/4W (WR775)	R394	1-249-432-11	CARBON	18K	5%	1/4W (WR87ES)
R181	1-249-433-11	CARBON	22K	5%	1/4W (WR87ES)	R395	1-247-854-11	CARBON	9.1K	5%	1/4W (WR87ES)
R182	1-249-421-11	CARBON	2.2K	5%	1/4W (WR87ES)	R395	1-247-862-11	CARBON	20K	5%	1/4W (WR775)
R183	1-249-433-11	CARBON	22K	5%	1/4W (WR87ES)	R491	1-249-428-11	CARBON	8.2K	5%	1/4W (WR87ES)
R184	1-249-405-11	CARBON	100	5%	1/4W (WR775)	R491	1-249-430-11	CARBON	12K	5%	1/4W (WR775)
R184	1-249-409-11	CARBON	220	5%	1/4W (WR87ES)	R492	1-247-883-00	CARBON	150K	5%	1/4W (WR775)
R191	1-249-420-11	CARBON	1.8K	5%	1/4W	R492	1-247-884-11	CARBON	160K	5%	1/4W (WR87ES)
R201	1-249-423-11	CARBON	3.3K	5%	1/4W	R493	△ 1-212-857-00	FUSIBLE	10	5%	1/4W F
R202	1-247-887-00	CARBON	220K	5%	1/4W	R494	1-249-431-11	CARBON	15K	5%	1/4W (WR775)
R203	1-249-441-11	CARBON	100K	5%	1/4W	R494	1-249-432-11	CARBON	18K	5%	1/4W (WR87ES)
R204	1-249-423-11	CARBON	3.3K	5%	1/4W	R495	1-247-854-11	CARBON	9.1K	5%	1/4W (WR87ES)
R205	1-249-428-11	CARBON	8.2K	5%	1/4W	R495	1-247-862-11	CARBON	20K	5%	1/4W (WR775)
R206	1-247-864-11	CARBON	24K	5%	1/4W						
R207	1-249-414-11	CARBON	560	5%	1/4W						
R219	1-249-421-11	CARBON	2.2K	5%	1/4W						
R221	1-249-425-11	CARBON	4.7K	5%	1/4W						
R224	1-249-426-11	CARBON	5.6K	5%	1/4W						
R225	1-249-421-11	CARBON	2.2K	5%	1/4W						
R226	1-249-429-11	CARBON	10K	5%	1/4W						

**Note:**  
The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

**Note:**  
Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

## SYSTEM CONTROL

INCLUDING HX PRO(A), HX PRO(B), TRANSLATION(A), TRANSLATION(B), MPX, POWER SW

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
R501	1-249-429-11	CARBON	10K	5%	1/4W	R538	1-247-874-11	CARBON	62K	5%	1/4W (WR775)
R502	1-249-434-11	CARBON	27K	5%	1/4W	R538	1-249-437-11	CARBON	47K	5%	1/4W (WR87ES)
R503	1-249-417-11	CARBON	1K	5%	1/4W	R539	1-247-864-11	CARBON	24K	5%	1/4W
R504	1-249-429-11	CARBON	10K	5%	1/4W	R541	1-249-441-11	CARBON	100K	5%	1/4W
R505	1-249-429-11	CARBON	10K	5%	1/4W	R542	1-249-417-11	CARBON	1K	5%	1/4W
R506	1-249-429-11	CARBON	10K	5%	1/4W	R551	1-247-866-11	CARBON	30K	5%	1/4W (WR87ES)
R507	1-249-441-11	CARBON	100K	5%	1/4W	R551	1-249-440-11	CARBON	82K	5%	1/4W (WR775)
R521	1-247-866-11	CARBON	30K	5%	1/4W (WR87ES)	R552	1-249-435-11	CARBON	33K	5%	1/4W (WR87ES)
R521	1-249-440-11	CARBON	82K	5%	1/4W (WR775)	R552	1-249-437-11	CARBON	47K	5%	1/4W (WR775)
R522	1-247-866-11	CARBON	30K	5%	1/4W (WR87ES)	R553	1-247-885-00	CARBON	180K	5%	1/4W (WR775)
R522	1-247-870-11	CARBON	43K	5%	1/4W (WR775)	R553	1-247-890-11	CARBON	300K	5%	1/4W (WR87ES)
R523	1-247-884-11	CARBON	160K	5%	1/4W (WR775)	R554	1-247-888-11	CARBON	240K	5%	1/4W (WR87ES)
R523	1-247-890-11	CARBON	300K	5%	1/4W (WR87ES)	R554	1-249-440-11	CARBON	82K	5%	1/4W (WR775)
R524	1-247-880-11	CARBON	110K	5%	1/4W (WR775)	R555	1-249-435-11	CARBON	33K	5%	1/4W
R524	1-247-889-00	CARBON	270K	5%	1/4W (WR87ES)	R556	1-247-872-11	CARBON	51K	5%	1/4W (WR87ES)
R525	1-249-435-11	CARBON	33K	5%	1/4W	R556	1-249-435-11	CARBON	33K	5%	1/4W (WR775)
R526	1-247-868-11	CARBON	36K	5%	1/4W (WR775)	R557	1-247-883-00	CARBON	150K	5%	1/4W (WR87ES)
R526	1-249-438-11	CARBON	56K	5%	1/4W (WR87ES)	R557	1-247-887-00	CARBON	220K	5%	1/4W (WR775)
R527	1-247-883-00	CARBON	150K	5%	1/4W (WR87ES)	R558	1-249-434-11	CARBON	27K	5%	1/4W (WR87ES)
R527	1-247-891-00	CARBON	330K	5%	1/4W (WR775)	R558	1-249-436-11	CARBON	39K	5%	1/4W (WR775)
R528	1-247-868-11	CARBON	36K	5%	1/4W (WR775)	R559	1-247-886-11	CARBON	200K	5%	1/4W (WR775)
R528	1-249-434-11	CARBON	27K	5%	1/4W (WR87ES)	R559	1-247-890-11	CARBON	300K	5%	1/4W (WR87ES)
R529	1-247-885-00	CARBON	180K	5%	1/4W (WR775)	R560	1-247-891-00	CARBON	330K	5%	1/4W (WR87ES)
R529	1-247-889-00	CARBON	270K	5%	1/4W (WR87ES)	R560	1-247-892-11	CARBON	360K	5%	1/4W (WR775)
R530	1-247-868-11	CARBON	36K	5%	1/4W (WR87ES)	R561	1-247-870-11	CARBON	43K	5%	1/4W (WR775)
R530	1-247-892-11	CARBON	360K	5%	1/4W (WR775)	R561	1-249-437-11	CARBON	47K	5%	1/4W (WR87ES)
R531	1-247-870-11	CARBON	43K	5%	1/4W (WR775)	R562	1-247-872-11	CARBON	51K	5%	1/4W (WR87ES)
R531	1-249-437-11	CARBON	47K	5%	1/4W (WR87ES)	R562	1-249-438-11	CARBON	56K	5%	1/4W (WR775)
R532	1-247-872-11	CARBON	51K	5%	1/4W (WR775)	R563	1-247-883-00	CARBON	150K	5%	1/4W (WR775)
R532	1-249-438-11	CARBON	56K	5%	1/4W (WR87ES)	R563	1-249-441-11	CARBON	100K	5%	1/4W (WR87ES)
R533	1-247-883-00	CARBON	150K	5%	1/4W (WR775)	R564	1-249-437-11	CARBON	47K	5%	1/4W (WR87ES)
R533	1-247-887-00	CARBON	220K	5%	1/4W (WR87ES)	R564	1-249-438-11	CARBON	56K	5%	1/4W (WR775)
R534	1-249-437-11	CARBON	47K	5%	1/4W (WR87ES)	R565	1-247-882-11	CARBON	130K	5%	1/4W (WR87ES)
R534	1-249-438-11	CARBON	56K	5%	1/4W (WR775)	R565	1-249-441-11	CARBON	100K	5%	1/4W (WR775)
R535	1-247-878-00	CARBON	91K	5%	1/4W (WR775)	R566	1-247-872-11	CARBON	51K	5%	1/4W (WR87ES)
R535	1-247-882-11	CARBON	130K	5%	1/4W (WR87ES)	R566	1-249-440-11	CARBON	82K	5%	1/4W (WR775)
R536	1-247-872-11	CARBON	51K	5%	1/4W (WR87ES)	R567	1-247-872-11	CARBON	51K	5%	1/4W (WR775)
R536	1-247-878-00	CARBON	91K	5%	1/4W (WR775)	R567	1-249-437-11	CARBON	47K	5%	1/4W (WR87ES)
R537	1-247-872-11	CARBON	51K	5%	1/4W (WR775)						
R537	1-249-437-11	CARBON	47K	5%	1/4W (WR87ES)						

**SYSTEM CONTROL**

INCLUDING HX PRO(A), HX PRO(B), TRANSLATION(A), TRANSLATION(B), MPX, POWER SW

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
R568	1-247-874-11	CARBON	62K	5%	1/4W (WR775)	R587	1-247-864-11	CARBON	24K	5%	1/4W
R568	1-249-437-11	CARBON	47K	5%	1/4W (WR87ES)	R591	1-249-409-11	CARBON	220	5%	1/4W
						R594	1-249-441-11	CARBON	100K	5%	1/4W
R569	1-247-880-11	CARBON	110K	5%	1/4W	R595	1-249-442-11	CARBON	510	5%	1/4W
						R598	1-249-441-11	CARBON	100K	5%	1/4W
R570	1-247-868-11	CARBON	36K	5%	1/4W (WR775)						
R570	1-249-435-11	CARBON	33K	5%	1/4W (WR87ES)	R599	1-249-417-11	CARBON	1K	5%	1/4W
						R602	1-247-887-00	CARBON	220K	5%	1/4W
R571	1-247-874-11	CARBON	62K	5%	1/4W (WR775)	R603	1-249-425-11	CARBON	4.7K	5%	1/4W
R571	1-249-439-11	CARBON	68K	5%	1/4W (WR87ES)	R604	1-249-441-11	CARBON	100K	5%	1/4W
						R605	1-249-428-11	CARBON	8.2K	5%	1/4W
R572	1-247-864-11	CARBON	24K	5%	1/4W (WR87ES)						
R572	1-247-866-11	CARBON	30K	5%	1/4W (WR775)	R606	1-249-441-11	CARBON	100K	5%	1/4W
						R607	1-249-417-11	CARBON	1K	5%	1/4W
R573	1-247-868-11	CARBON	36K	5%	1/4W	R608	1-249-441-11	CARBON	100K	5%	1/4W
						R609	1-249-423-11	CARBON	3.3K	5%	1/4W
R574	1-247-860-11	CARBON	16K	5%	1/4W (WR87ES)	R701	1-249-421-11	CARBON	2.2K	5%	1/4W
R574	1-249-432-11	CARBON	18K	5%	1/4W (WR775)						
						R702	1-249-421-11	CARBON	2.2K	5%	1/4W
R575	1-247-880-11	CARBON	110K	5%	1/4W (WR775)	R703	1-247-856-00	CARBON	11K	5%	1/4W
R575	1-247-881-00	CARBON	120K	5%	1/4W (WR87ES)	R704	1-249-428-11	CARBON	8.2K	5%	1/4W
						R705	1-249-425-11	CARBON	4.7K	5%	1/4W
R576	1-247-868-11	CARBON	36K	5%	1/4W (WR775)	R706	1-249-429-11	CARBON	10K	5%	1/4W
R576	1-249-435-11	CARBON	33K	5%	1/4W (WR87ES)						
						R707	1-249-409-11	CARBON	220	5%	1/4W
R577	1-249-438-11	CARBON	56K	5%	1/4W (WR775)	R708	1-249-420-11	CARBON	1.8K	5%	1/4W
R577	1-249-439-11	CARBON	68K	5%	1/4W (WR87ES)	R709	1-249-426-11	CARBON	5.6K	5%	1/4W
						R710	1-249-422-11	CARBON	2.7K	5%	1/4W
R578	1-247-874-11	CARBON	62K	5%	1/4W (WR775)	R711	1-249-430-11	CARBON	12K	5%	1/4W
R578	1-249-433-11	CARBON	22K	5%	1/4W (WR87ES)						
						R712	1-249-429-11	CARBON	10K	5%	1/4W
R579	1-247-872-11	CARBON	51K	5%	1/4W (WR87ES)	R713	1-249-409-11	CARBON	220	5%	1/4W
R579	1-249-437-11	CARBON	47K	5%	1/4W (WR775)	R714	1-249-429-11	CARBON	10K	5%	1/4W
						R715	1-249-429-11	CARBON	10K	5%	1/4W
R580	1-247-866-11	CARBON	30K	5%	1/4W (WR87ES)	R721	1-249-437-11	CARBON	47K	5%	1/4W
R580	1-249-436-11	CARBON	39K	5%	1/4W (WR775)						
						R801	1-249-434-11	CARBON	27K	5%	1/4W
R581	1-247-880-11	CARBON	110K	5%	1/4W (WR87ES)	R802	1-249-434-11	CARBON	27K	5%	1/4W (WR87ES)
R581	1-247-881-00	CARBON	120K	5%	1/4W (WR775)	R803	1-249-434-11	CARBON	27K	5%	1/4W (WR87ES)
						R804	1-249-434-11	CARBON	27K	5%	1/4W
R582	1-247-866-11	CARBON	30K	5%	1/4W (WR87ES)	R805	1-247-895-00	CARBON	470K	5%	1/4W
R582	1-247-872-11	CARBON	51K	5%	1/4W (WR775)						
						R806	1-247-895-00	CARBON	470K	5%	1/4W
R583	1-247-870-11	CARBON	43K	5%	1/4W (WR775)	R807	1-247-895-00	CARBON	470K	5%	1/4W
R583	1-249-439-11	CARBON	68K	5%	1/4W (WR87ES)	R808	1-247-895-00	CARBON	470K	5%	1/4W
						R809	1-249-425-11	CARBON	4.7K	5%	1/4W
R584	1-249-431-11	CARBON	15K	5%	1/4W (WR87ES)	R810	1-247-862-11	CARBON	20K	5%	1/4W
R584	1-249-433-11	CARBON	22K	5%	1/4W (WR775)						
						R811	1-249-425-11	CARBON	4.7K	5%	1/4W
R585	1-247-872-11	CARBON	51K	5%	1/4W (WR87ES)	R812	1-247-862-11	CARBON	20K	5%	1/4W
R585	1-249-438-11	CARBON	56K	5%	1/4W (WR775)	R813	1-249-437-11	CARBON	47K	5%	1/4W
						R814	1-247-866-11	CARBON	30K	5%	1/4W
R586	1-247-868-11	CARBON	36K	5%	1/4W (WR775)	R815	1-249-434-11	CARBON	27K	5%	1/4W
R586	1-249-434-11	CARBON	27K	5%	1/4W (WR87ES)						
						R816	1-247-872-11	CARBON	51K	5%	1/4W
						R818	1-247-872-11	CARBON	51K	5%	1/4W
						R819	1-249-405-11	CARBON	100	5%	1/4W
						R820	1-249-437-11	CARBON	47K	5%	1/4W

## SYSTEM CONTROL

INCLUDING HX PRO(A), HX PRO(B), TRANSLATION(A), TRANSLATION(B), MPX, POWER SW

Ref. No.	Part No.	Description	Remark		
R821	1-247-866-11	CARBON	30K	5%	1/4W
R822	1-249-434-11	CARBON	27K	5%	1/4W
R823	1-247-872-11	CARBON	51K	5%	1/4W
R825	1-249-405-11	CARBON	100	5%	1/4W
R826	1-247-872-11	CARBON	51K	5%	1/4W
R827	1-249-441-11	CARBON	100K	5%	1/4W
R828	1-249-429-11	CARBON	10K	5%	1/4W
R829	1-249-429-11	CARBON	10K	5%	1/4W
R830	1-249-429-11	CARBON	10K	5%	1/4W
R831	1-249-429-11	CARBON	10K	5%	1/4W
R832	1-249-417-11	CARBON	1K	5%	1/4W
R833	1-249-438-11	CARBON	56K	5%	1/4W
R858	1-247-862-11	CARBON	20K	5%	1/4W (WR775)
R858	1-249-432-11	CARBON	18K	5%	1/4W (WR87ES)
R859	1-247-866-11	CARBON	30K	5%	1/4W (WR87ES)
R859	1-249-437-11	CARBON	47K	5%	1/4W (WR775)
R860	1-247-858-11	CARBON	13K	5%	1/4W (WR775)
R860	1-249-429-11	CARBON	10K	5%	1/4W (WR87ES)
R862	1-247-862-11	CARBON	20K	5%	1/4W (WR775)
R862	1-249-428-11	CARBON	8.2K	5%	1/4W (WR87ES)
R863	1-249-437-11	CARBON	47K	5%	1/4W (WR775)
R863	1-249-446-11	CARBON	4.3K	5%	1/4W (WR87ES)
R864	1-247-858-11	CARBON	13K	5%	1/4W (WR775)
R865	1-247-852-11	CARBON	7.5K	5%	1/4W (WR87ES)
R868	1-249-429-11	CARBON	10K	5%	1/4W
R869	1-249-429-11	CARBON	10K	5%	1/4W
R870	1-249-429-11	CARBON	10K	5%	1/4W
R874	1-247-903-00	CARBON	1M	5%	1/4W
R891	1-249-429-11	CARBON	10K	5%	1/4W
R892	1-249-429-11	CARBON	10K	5%	1/4W
R893	1-249-415-11	CARBON	680	5%	1/4W
R894	1-249-415-11	CARBON	680	5%	1/4W
R0391	1-249-428-11	CARBON	8.2K	5%	1/4W (WR87ES)
R0391	1-249-430-11	CARBON	12K	5%	1/4W (WR775)
R0392	1-247-883-00	CARBON	150K	5%	1/4W (WR775)
R0392	1-247-884-11	CARBON	160K	5%	1/4W (WR87ES)
R0393	△ 1-212-857-00	FUSIBLE	10	5%	1/4W F
R0394	1-249-431-11	CARBON	15K	5%	1/4W (WR775)
R0394	1-249-432-11	CARBON	18K	5%	1/4W (WR87ES)
R0395	1-247-854-11	CARBON	9.1K	5%	1/4W (WR87ES)
R0395	1-247-862-11	CARBON	20K	5%	1/4W (WR775)

Ref. No.	Part No.	Description	Remark		
R0491	1-249-428-11	CARBON	8.2K	5%	1/4W (WR87ES)
R0491	1-249-430-11	CARBON	12K	5%	1/4W (WR775)
R0492	1-247-883-00	CARBON	150K	5%	1/4W (WR775)
R0492	1-247-884-11	CARBON	160K	5%	1/4W (WR87ES)
R0493	△ 1-212-857-00	FUSIBLE	10	5%	1/4W F
R0494	1-249-431-11	CARBON	15K	5%	1/4W (WR775)
R0494	1-249-432-11	CARBON	18K	5%	1/4W (WR87ES)
R0495	1-247-854-11	CARBON	9.1K	5%	1/4W (WR87ES)
R0495	1-247-862-11	CARBON	20K	5%	1/4W (WR775)

## &lt; VARIABLE RESISTOR &gt;

RV121	1-238-600-11	RES. ADJ. CARBON 10K
RV122	1-238-600-11	RES. ADJ. CARBON 10K
RV221	1-238-600-11	RES. ADJ. CARBON 10K
RV222	1-238-600-11	RES. ADJ. CARBON 10K
RV391	1-238-548-11	RES. ADJ. CARBON 22K
RV491	1-238-548-11	RES. ADJ. CARBON 22K
RV501	1-238-953-11	RES. VAR. CARBON 50K/50K (BALANCE) (WR87ES)
RV502	1-241-133-11	RES. VAR. CARBON 50K/50K (REC LEVEL) (WR87ES)
RV503	1-238-085-11	RES. VAR. CARBON 20K/20K (PHONE LEVEL) (WR87ES)
RV0391	1-238-548-11	RES. ADJ. CARBON 22K
RV0491	1-238-548-11	RES. ADJ. CARBON 22K

## &lt; SWITCH &gt;

S501	1-571-083-11	SWITCH, SLIDE (POWER) (WR87ES)
S701	△ 1-554-118-00	SWITCH, PUSH (1 KEY) (POWER)

## &lt; TRANSFORMER &gt;

T391	1-433-335-11	TRANSFORMER, BIAS OSCILLATION (WR87ES)
T391	1-433-367-11	TRANSFORMER, BIAS OSCILLATION (WR775)
T491	1-433-335-11	TRANSFORMER, BIAS OSCILLATION (WR87ES)
T491	1-433-367-11	TRANSFORMER, BIAS OSCILLATION (WR775)
T0391	1-433-335-11	TRANSFORMER, BIAS OSCILLATION (WR87ES)
T0391	1-433-367-11	TRANSFORMER, BIAS OSCILLATION (WR775)
T0491	1-433-335-11	TRANSFORMER, BIAS OSCILLATION (WR87ES)
T0491	1-433-367-11	TRANSFORMER, BIAS OSCILLATION (WR775)

## &lt; TEST PIN &gt;

TP1	* 1-564-505-11	PLUG, CONNECTOR 2P
TP2	* 1-564-506-11	PLUG, CONNECTOR 3P
TP691	* 1-564-520-11	PLUG, CONNECTOR 5P
TP0691	* 1-564-520-11	PLUG, CONNECTOR 5P

## Note:

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

## Note:

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

**SYSTEM CONTROL**

INCLUDING HX PRO(A), HX PRO(B), TRANSLATION(A), TRANSLATION(B), MPX, POWER SW

Ref. No.	Part No.	Description	Remark
----------	----------	-------------	--------

&lt; CERAMIC &gt;

X801 1-577-358-21 VIBRATOR, CERAMIC (4MHZ)

\*\*\*\*\*

MISCELLANEOUS

\*\*\*\*\*

11    △ 1-551-506-XX CORD, POWER (WR775)  
 11    △ 1-555-465-00 CORD, POWER (WR87ES)  
 76    \* 1-575-847-11 WIRE, FLAT TYPE (5 CORE)  
 77    \* 1-575-851-11 WIRE, FLAT TYPE (7 CORE)  
 78    \* 1-575-848-11 WIRE, FLAT TYPE (5 CORE)  
 79    \* 1-575-853-11 WIRE, FLAT TYPE (15 CORE)  
 80    1-534-517-00 WIRE, FLAT TYPE (11 CORE)  
 81    \* 1-575-780-11 WIRE, FLAT TYPE (7 CORE)  
 82    \* 1-575-850-11 WIRE, FLAT TYPE (9 CORE)  
 83    \* 1-575-781-11 WIRE, FLAT TYPE (9 CORE)

136    \* 1-575-847-11 WIRE, FLAT TYPE (5 CORE)  
 137    \* 1-575-851-11 WIRE, FLAT TYPE (7 CORE)  
 138    \* 1-575-848-11 WIRE, FLAT TYPE (5 CORE)  
 139    \* 1-575-853-11 WIRE, FLAT TYPE (15 CORE)  
 140    1-534-517-00 WIRE, FLAT TYPE (11 CORE)  
 141    \* 1-575-780-11 WIRE, FLAT TYPE (7 CORE)  
 142    \* 1-575-850-11 WIRE, FLAT TYPE (9 CORE)  
 143    \* 1-575-781-11 WIRE, FLAT TYPE (9 CORE)

F701    △ 1-532-742-11 FUSE, GLASS TUBE (1.6A/125V)  
 F702    △ 1-532-742-11 FUSE, GLASS TUBE (1.6A/125V)  
 HRPE101    A-2003-420-A BASE ASSY, HEAD (REC/PB/ERASE) (WR87ES)  
 HRPE101    A-2003-477-A BASE ASSY, HEAD (REC/PB/ERASE) (WR775)  
 M1        X-3359-417-1 MOTOR ASSY (CAPSTAN)  
 M2        A-2003-474-A MOTOR ASSY (REEL)  
 S87       1-572-393-11 SWITCH, LEAF (DIRECTION)  
 T701    △ 1-450-431-11 TRANSFORMER, POWER

\*\*\*\*\*

ACCESSORY &amp; PACKING MATERIAL

\*\*\*\*\*

1-559-533-11 CORD, CONNECTION  
 \* 3-354-918-61 INDIVIDUAL CARTON  
 \* 3-354-918-71 INDIVIDUAL CARTON (WR87ES)  
 \* 3-359-942-01 CUSHION  
 3-703-450-01 INSTRUCTION (WR87ES/WR775:US)  
 \* 3-704-343-01 SHEET (STANDARD), PROTECTION  
 3-753-337-21 MANUAL, INSTRUCTION (ENGLISH) (WR87ES)  
 3-753-338-21 MANUAL, INSTRUCTION (ENGLISH)  
 3-753-388-31 MANUAL, INSTRUCTION  
 (WR775:Canadian, FRENCH)

Ref. No.	Part No.	Description	Remark
----------	----------	-------------	--------

**HARDWARE LIST**

# 1    7-682-548-09 SCREW +BVTT 3X8 (S)  
 # 2    7-621-849-00 SCREW (BV/RING)  
 # 3    7-685-646-79 SCREW +BVTP 3X8 TYPE2 SLIT  
 # 4    7-682-547-04 SCREW +BVTT 3X6 (S)  
 # 5    7-682-547-09 SCREW +BVTT 3X6 (S)  
 # 6    7-621-775-10 SCREW +B 2.6X4 (WR87ES)  
  
 # 7    7-621-773-95 SCREW +BVTT 2.6X6 (S)  
 # 8    7-685-534-19 SCREW +BTP 2.6X8 TYPE2 N-S (WR87ES)  
 # 9    7-621-770-67 SCREW +BVTT 2.6X6 (S) (WR87ES)  
 #10    7-627-556-08 SCREW +P 2.6X2.8  
 #11    7-621-775-00 SCREW +B 2.6X3  
 #12    7-621-773-93 SCREW (PANEL 2.6 TP2) (WR775)

**Note:**

The components identified by mark **△** or dotted line with mark **△** are critical for safety. Replace only with part number specified.

**Note:**

Les composants identifiés par une marque **△** sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.





# TC-WR87ES/WR775

## SONY<sup>®</sup> SERVICE MANUAL

US Model  
Canadian Model

TC-WR775

US Model

TC-WR87ES

## CORRECTION-1

File this correction with the service manual.

 :Correct Portion

### 1. SECTION 4 ELECTRICAL ADJUSTMENTS (Service Manual Page 9.)

Playback Level Adjustment

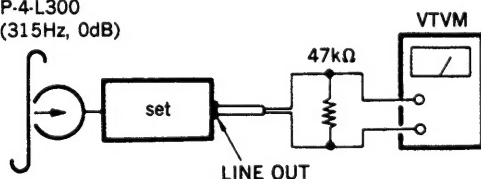
DECK A

DECK B

Procedure :

—Forward Playback Mode—

test tape  
P-4-L300  
(315Hz, 0dB)



Adjust each RV11 (L-CH) and RV21 (R-CH) so that the VTVM reading becomes within adjustment limits below on both of deck A and deck B.

Adjustment Limits :



LINE OUT level :  $-5 \pm 0.5\text{dB}$  (0.412 to 0.461V)

Level difference between channels : within 0.5dB

Confirm the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

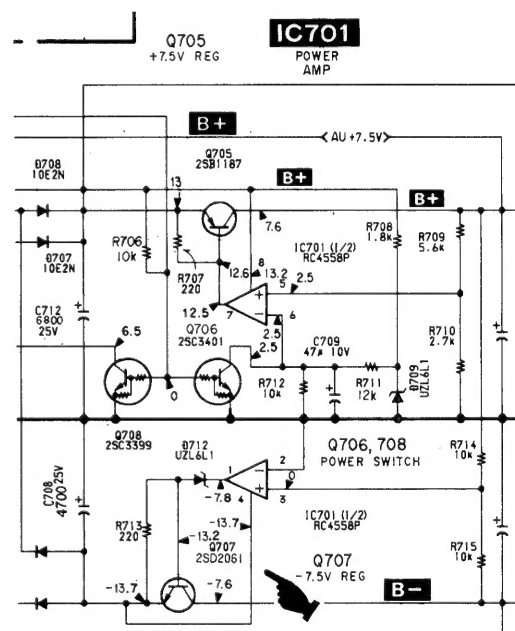
Adjustment Location : MD(C) board (deck A, deck B)  
(See page 10)

### 3. SECTION 7 ELECTRICAL PARTS LIST (Service Manual Page 40.)

Ref. No.	Part No.	Description	Remark
Q701	8-729-906-97	TRANSISTOR 2SD2061-F	
Q702	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q703	8-729-821-04	TRANSISTOR 2SA1317-STU	
Q704	8-729-924-90	TRANSISTOR 2SB1370-EF	
Q705	8-729-924-90	TRANSISTOR 2SB1370-EF	
Q706	8-729-900-85	TRANSISTOR DTC144WS	
Q707	8-729-906-97	TRANSISTOR 2SD2061-F	

### 2. SECTION 5 DIAGRAMS

Service Manual Page 20.  
(Location G~J-8~10)



Sony Corporation  
Audio Group

9-956-430-91

English  
91F1834-1  
Printed in Japan  
©1991.6

Published by Customer Relations and Service Group